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ART. I.—THE ARCTIC REGIONS AND SIR JOHN FRANKLIN.*

It is now more than three and a half centuries since the first efforts were made to discover a north-west passage to India. These efforts have been renewed by various European nations; but the English were the first to engage in them, and have ever been the most ardent and persevering. While others have long since completely abandoned the idea of a north-west passage to India, through Behring's Straits, the English have never given it up. In spite of the immense sums that they have lost in repeated expeditions to the north-west, the many valuable lives that have been sacrificed, and the disasters of more than three hundred years, still we have seen them, in 1845, again renewing their efforts, by sending another costly expedition under Sir John Franklin.

We cannot but express our high admiration of the energy and perseverance with which the English have redoubled, from time to time, their exertions to make out the long-wished-for passage; though at the same time, we must say, that we have ever been skeptical in regard to the practical utility of such a north-west passage to India, should it ever be discovered. The extreme high latitude in which it will be found, if found at all, will render it quite unavailable for commercial, and still more so for traveling purposes. Such a passage would not be open for navigation more than two months in a year; and, judging from all past experience of navigators in those seas, the imminent dangers of a voyage by that route would prevent any attempts to make it a medium for commerce. What good, then, is to result to the world from the discovery of a north-west passage to India?

These Arctic expeditions, it is true, have enriched science by the

* Arctic Searching Expedition.—A Journal of a Boat Voyage through Rupert's Land and the Arctic Sea, in search of the Discovery Ships, under the command of Sir John Franklin. By Sir John Richardson, C. B., F. R. S., &c. Harper & Brothers. 1852.

contribution of many curious and valuable facts and discoveries, and have well nigh solved the greatest geographical problem of the age; but this is all that can be said of them.

Seven years have now elapsed since Sir John Franklin, the commander of the last expedition to discover the supposed north-west passage, left England with two small ships, the *Erebus* and *Terror*. The expedition sailed from England on the 19th of May, 1845, and early in the July following it reached the Whalefish Islands, near Disco, on the western coast of Greenland. From this point Sir John Franklin, and others of the expedition, sent letters to England, which are the last that have been received from them. Several expeditions have been sent out in search of Sir John Franklin, but all in vain. In 1848, the British government fitted out a triple expedition to explore the Arctic regions in three directions. One under Sir James C. Ross, with two ships, was to proceed to Barrow's Straits, and search in that direction; another was to enter the Arctic seas through Behring's Straits, and explore eastward; while a third, under Sir John Richardson, was to proceed over land to the mouth of Mackenzie's River, and explore the whole coast from the mouth of that river eastward. The results of this last expedition are embodied in the work, whose title we have given on the first page of this paper.

Sir John Richardson left England on the 25th of March, 1848, having sent out his stores, boats, &c., for the journey, in ships bound for Hudson's Bay. These arrived at the mouth of Nelson's River, their place of destination, on the 8th of September, 1847, and the stores, &c., were conveyed to Cumberland House, the place of rendezvous of the expedition, on the Saskatchewan River, there to await the arrival of Sir John Richardson, who was to leave England in the following spring. The boats in which he was to descend Mackenzie's River to the Arctic Ocean, and survey the coast eastward, were four in number, built in England, and capable of carrying eight men each, and a cargo of two tons.

Sir John Richardson arrived in New-York on the 10th of April, 1848, and immediately proceeded for Cumberland House, his place of rendezvous, by the way of Montreal, the river St. Lawrence, and the lakes. He arrived at Fort William, on the western shore of Lake Superior, on the 12th of May, and at Cumberland House on the 13th of June, after suffering much delay on account of the ice in Lake Winipeg. Cumberland House is 2,880 miles from New-York.

At Cumberland House he learned that Mr. Bell, who had charge of the boats and stores destined for the mouth of the Mackenzie's River, had left a fortnight before, with all the boats, for the Arctic Ocean. Sir John Richardson, therefore, had nothing to do but to follow him, which he did the next day, the 14th of June, in canoes, his company of Canadian voyageurs consisting of fifteen persons. The route lay along the chain of small rivers and lakes which stretches from Lake Superior to the great Methy Portage, in lat. 56° 36′ N., and long. 109° 51′ W. This portage is the dividing ridge which separates the waters that flow to the N. E. into Hudson's Bay

from those flowing N. W. into Mackenzie's River, and thence into the Arctic Ocean. The journey from Cumberland House, at Lake Winipeg, to the Methy Portage, in canoes, is tedious, the rivers being shallow and the portages frequent, though not long. At each portage, the canoes and baggage are carried across to the next water on the shoulders of men.

At Methy Portage Sir John Richardson overtook Mr. Bell with his four boats, after a fourteen days' journey from Cumberland House. The country along the route is hilly. In the eastern part of the route the prevailing rock is limestone, (silurian,) with frequent granite boulders. As they advanced, they found granite, gneiss, chlorite slate, like that on the north side of Lake Superior, and a hornblende slate occupying the beds of the rivers, and rising on each bank into rounded knolls and low cliffs. Granite was found on all the portages, with greenstone, hornblende, and, in some places, black basalt. At the three portages of Woody Lake, a micaceous gneiss, or mica-slate rock, prevails. As they approached the Great Methy Portage, lofty granite precipices, 150 feet high, were common, and the general aspect of the country became like that of the north shore of Lake Superior. A few miles on each side of the route the country rose into eminences four or five hundred feet above the streams. The islands in some of the lakes consisted of conical heaps of granite boulders.

Methy Portage extends from Methy Lake to the Clear Water River, a branch of the Athabosca. The length of the portage is 10.7 miles. There being no horses, the four boats and their cargoes were taken over this long distance on the backs of the men, the whole route being divided into nine stages. The portage is nearly level, and the uppermost stratum is alluvial sand lying upon sandstone, which in its turn rests on limestone, which forms the entire bed of the Clear Water River. The portage is about 900 feet above the level of the sea. Nine days were consumed in transporting the boats and stores across it.

On the 6th of July the party embarked on the Clear Water River, the valley of which "is not excelled, or, indeed, equaled by anything," says Sir John Richardson, "that I have seen in America for beauty." The banks are of limestone, and on the portage, about ten miles below the Methy, and "on the neighboring islands and flats, the limestone stands up in mural precipices and thin partitions, like the walls of a ruined city; and the beholder cannot help believing that the rock once formed a barrier at this strait, when the upper part of the river must have been one long lake."

The whole tract of country, between the Clear Water River and Athabosca Lake, is said to be a wooded, sandy plain, abounding in bison and other game.

On the 7th of July the party passed three portages. The weather was extremely hot, and mosquitoes very annoying, notwithstanding that they were in about lat. 56° N. The mosquito is an inhabitant of all climes, for it has been found in all countries. M. Erman found it in Northern Siberia, at Obdorsk, near the polar circle. On the

same day the party gathered ripe strawberries on the banks of the Clear Water, also dwarf cherries, and a species of cranberry.

Two of the boats having been broken at the last portage, they were detained to repair them. On the 9th, the party entered the Elk, or Athabosca River, "a majestic stream, between a quarter and half a mile wide, with a considerable current, but without rapids."* Limestone strata, covered by a thick deposit of bituminous shale, form the banks of the Athabosca for 36 miles downward from the Clear Water to the site of Beren's Foot, now abandoned. The cliffs are shelving, and in many places 150 feet high. About 30 miles below the mouth of the Clear Water, the limestone strata were found covered by a bituminous deposit upwards of 100 feet thick. This deposit disappears in the neighborhood of Beren's House. Farther down, about three miles below Red River, where there was once a trading establishment called *La vieux Fort de la Riviére Rouge*, is a copious spring of mineral pitch issuing from a crevice in a cliff composed of sand and bitumen. It is a few hundred yards back from the river, in a thick wood. Several small birds were found, by Sir John Richardson, suffocated in the pitch.

The whole country along the river, as the party descended, exhibited bituminous cliffs, lying above a cream-colored and white limestone. The lower layers of the bituminous strata were so full of bitumen as to soften in the hand, while the upper layers were hard with iron. "The whole country for many miles is so full of bitumen that it flows readily into a pit dug a few feet below the surface." The limestone does not alternate with the bituminous beds, but in many places is itself highly bituminous, and contains shells filled with bitumen.

The Athabosca rises in the Rocky Mountains, in lat. 47½° N. It flows at the rate of about six miles an hour below the Clear Water River. Its source at the foot of Mount Brown is about 8,000 feet above the level of the sea. It flows through prairie lands abounding in moose-deer. All the tributaries flow at the bottom of deep ravines.

On the 10th of July the party arrived at the head of the delta which the Athabosca forms on entering the Athabosca Lake. The river here divides into four or five branches. On the morning of the 11th they entered the lake, and after firing a salute to a squadron of Mackenzie River boats, just in from the north, they proceeded to Fort Chepewyan, a little to the east of the mouth of the river. This fort is in lat. 58° 42′ N., and long. 111° 18′ W. Lake Athabosca is 200 miles long and about 15 miles wide. Its north shore is very high, whence it is sometimes called the Lake of the Hills. It is about 600 feet above the level of the sea. The country about Fort Chepewyan is composed of rounded knolls of granite, nearly destitute of soil. The north shores of the lake, and also the numerous islands of the west end, are of granite. It is a curious fact that Lake Wollaston, a little to the south-east of Athabosca, discharges its waters by two outlets, one of which flows into Lake Athabosca and the other into

* Arctic Exp., p. 80. Idem p. 83.

Hudson's Bay, the waters thus flowing in opposite directions, and proving Lake Wollaston to be on the dividing ridge. The great Peace River, also, which rises west of and flows through the Rocky Mountains into Slave River, the outlet of, Lake Athabosca, discharges its waters in two directions, a part flowing into the Athabosca Lake and a part north along Slave River. These are not very common phenomena in hydrography. Plumbago, of an excellent quality, is found on the shores of Lake Athabosca.

The whole country west of Lake Athabosca, through which the Peace River flows, is "much of the character of a plain country," having a gradual and regular ascent westward. The bed of the Peace River, at the distance of 250 miles from its mouth, is 600 feet below the level of the country, which has no appearance of being elevated. No mountains or hills are to be seen. The bed of the river, however, in that distance, has risen 300 feet. The elevation of the country is about 1,600 feet above the sea, 300 miles west of the Athabosca Lake; and the gap in the Rocky Mountains, through which the Peace River passes, is about 6,000 feet above the sea.

On the 13th of July they proceeded on their journey down Slave River, and arrived at the Great Slave Lake in four days. Granite is the prevailing rock on this river, and spruce, pine, birch and poplar are the chief trees of the forest. The undergrowth consists of willow, dwarf birch, alders, roses, brambles, gooseberries, white cornel and mooseberry. The oaks, elms, ash, pitch pine and balsam fir that had prevailed between Lake Superior and the Athabosca Lake, had disappeared. The current of the Slave River is not very rapid, but it is full of islands, rapids and cascades, formed by ledges of granite extending across the river. The islands are all well wooded and picturesque. The portages are frequent, but short. The river is, in some places, from one to two miles wide. Some of the cascades are 20 feet in perpendicular height.

The travelers were much annoyed, while descending the Slave River, by the heat of the sun and mosquitoes and other formidable insects. "The power of the sun on the 14th of July," says Sir John Richardson, "was so great, in a cloudless sky, that I was glad to take shelter in the water while the crews were engaged" in carrying the boats over the portages. He adds: "I have never felt the sun's direct rays so oppressive within the tropics as I have experienced them to be on some occasions in the high latitudes." Bathing in the Slave River was found to be a luxury almost out of the question, owing to the immense swarms of mosquitoes; and what was still *worse*, a most blood-thirsty insect, the *tabanus*, a large fly that draws blood at every bite, was also on hand, to complete the work which the mosquitoes were unable to finish. But this is not all; "leeches," says Sir John Richardson, "also infest the still waters, and are prompt in their aggressions."

The Slave River enters the Great Slave Lake through a delta of low, well-wooded, alluvial islands, by many channels, having a spread of more than 20 miles. At the mouth of the most eastern branch is Stony Island, a naked mass of granite, rising fifty or sixty feet above

the water; and beyond that, to the eastward, the banks of the lake are wholly primitive. West of the Slave River, to the Mackenzie, the southern shore is limestone, associated with bituminous shale.

They reached Fort Resolution, on the south shore, on the 17th of July, where they stayed only one hour, glad to get rid of the dense swarms of mosquitoes on shore by betaking themselves to the boats with a good breeze on the lake. According to the accounts of Sir John Richardson, the mosquitoes of the Great Slave Lake, in latitude 62° N., are more numerous and annoying than we have ever found them either in Louisiana or Texas. They sailed along the southern shore of the lake, which they found generally low, flat, and shelving, with few safe landing-places for boats. Swamps extend back from the lake, and in many places vast quantities of drift-wood are piled upon the shore. The Great Slave Lake is 300 miles long and about 50 wide.

On the 22d of July the party arrived at Fort Simpson, on the Mackenzie River, west of the lake, in lat. 61° 51′ N., and long. 121° 51′ W. The bank of the Mackenzie at this place is steep, and about 30 feet high, composed of sand and loam. The beach was lined with boulders of granite, greenstone, limestone and sandstone. The Mackenzie River runs in a channel scooped out of the upper silurian strata, and still never deposits. Neither granite, gneiss, nor mica-slate are seen on its banks, and even trap-rocks are rare, if any actually occur.*

At Fort Simpson, barley, oats and potatoes thrive, but wheat does not ripen. Barley is sown about the 20th of May and is ripe on the 20th of August. The ground freezes there to the depth of 16 feet. The meadows of the Mackenzie afford an abundance of good hay.

The Liards River, which rises west of the Rocky Mountains, and flows through them, empties into the Mackenzie at Fort Simpson. It is by way of this river that communication is carried on between the Great Slave Lake and the Pacific.

A short distance below the fort the river comes in contact with spurs of the Rocky Mountains. Several large streams flow into the Mackenzie below the fort. At the Bear Lake River, which flows from the lake of that name into the Mackenzie, there is a tertiary coal formation. If exposed to the action of moist air in mass, it takes fire spontaneously, burning with a fetid smell, and with but little smoke or flame. The coal beds are thus consumed as fast as they are exposed, and the bank is constantly tumbling down into the river. The beds were on fire in 1785, when discovered by Alexander Mackenzie, and they are still burning. From one to four beds of coal are exposed above the water level on the banks of the river, the thickest of which exceeds three yards. Pipe clay is also abundant on the banks of the river. The Indians eat it in times of scarcity. There are coal beds on fire on the Peace River, and on its branch, the Smoking River, near the base of the Rocky Mountains, from 1,800 to 2,000 feet above the sea.

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* Arctic Exp., p. 365.

The chief tree in these regions is the white spruce. It attains a girth of four or five feet, and a height of from 60 to 120 feet. Flowers are abundant, though almost on the polar circle. The American robin, the thrush, the swallow, blue-bird, and others of the feathery tribe, are common on the banks of the Mackenzie. Ducks, gulls, geese and frogs, abound in the lakes. The latter make the marshes vocal about the beginning of June. Frogs are found quite within the polar circle; snakes as far north as 56°, and the tortoise at the 51st degree of north latitude. Mr. Murray says, he found snakes within the polar circle, on the Yukon River.

As the party drew near to the mouth of the river, they found the banks, in some places, 300 feet high, and indications of its rising sometimes to the height of 40 feet. It passes through spurs of the Rocky Mountains, near its mouth, and the passage through is reduced to only a few hundred yards, causing the current to flow somewhat rapidly, though not too rapid for steamboats, which might ascend the river to the portage in Slave River, between Great Slave Lake and Lake Athabosca, a distance of near 1,300 miles. The Mackenzie forms a delta at its mouth, the head of which, where the river divides into two branches, is called Point Separation. It is in latitude 67° 49′ N. At this place the river is a mile and a half wide. Sir John Richardson arrived at this point on the 31st of July, 1848. Vegetation, at this point, preserves the same general character as higher up the river. The willow grows to the height of 20 feet.

At Point Separation, in compliance with his instructions, he buried, in a pit, on the bank of the river, a case of pemmican, together with a bottle containing a memorandum of the objects of the expedition. These were for those belonging to the party who were sent out under Sir James Ross, to search for Sir John Franklin, in case they should arrive at the Mackenzie River. Sir James Ross, simultaneously with Sir John Richardson, as we have before stated, was sent to Lancaster Sound, with directions to penetrate westward in search of the lost discovery ships; and in case they made their way as far as the shores of the Arctic, east of the Mackenzie, they were there to find supplies of pemmican* deposited by Sir John Richardson. A mark painted on the trunk of a tree indicated the spot where the pemmican was buried.

Most of the islands formed in the delta of the river by the ramifications of the stream are alluvial; and some of them are mud and sand banks covered with willows. These mud islands generally inclose ponds or marshes filled with drift timber. The larger islands are dry and have a firm soil, but are low, except near the sea, where they rise into conical hummocks from 80 to 90 feet high. A spur of the Rocky Mountains skirts the western channel of the river to the sea. The general elevation of these spurs is upwards of 1,000 feet. The foot of the mountains is about four miles from the bank of the river, after traveling over a low marshy alluvial plain covered with willows. The main ridge of the spur is 40 miles west of the river.

* Pemmican is a food made of dried pulverized beef, mixed with lard or suet, and sweetened with sugar or currants.

The eastern arm of the river is also flanked by a ridge of one of the spurs through which the river passes a short distance above the delta. These mountains are about 800 feet high. The party proceeded down the eastern arm, and found the banks and islands well wooded. The balsam poplar rises there, within the polar circle, to the height of twenty feet, and the white spruce to forty or fifty. The sand marten, a bird well known in Louisiana, was found burrowing in the banks of the Mackenzie. They leave the polar circle in September, for the south, the insects being then destroyed at the north by the frosts.

On the 2d of August the party passed sand hills, covered with large boulders, and almost entirely destitute of vegetation. This was in lat. 68° 50′ N., where vegetation almost entirely disappears. Farther on, they came to Sacred Island, in lat. 69° 4′ N., where the common red currant was found growing.

On the 3d of August they entered the estuary of the Mackenzie. Here they encountered 200 Esquimaux in their boats, who, after some trading with Sir John Richardson's party, attempted to plunder one of the boats that was behind. The timely approach of the boats ahead dispersed the Indians, and nothing was taken of much value.

All inquiries made to obtain of the natives information of the discovery ships were fruitless. The Indians of the Mackenzie Valley, and the shores of the Arctic Ocean, particularly the Esquimaux and Dog-rib, or Hare Indians, are extremely vicious. They do not feel the least shame in being detected in falsehood, and invariably practice it, if they think anything can be gained thereby. They are not more truthful among themselves than with strangers. They will rob and murder when a profitable opportunity occurs.

The course of the expedition now lay eastward. The first day, after leaving the mouth of the Mackenzie, they arrived at Copland Hutchinson Inlet, in lat. 69° 44′ N. Here the variation of the needle was 58° E. The coast was low and flat, with conical eminences of no great height, at intervals of seven or eight miles. These eminences were supposed to be sand made by the washing of high tides, while the lands were inundated by the sea. The surf breaks high upon the shelving flats, which are covered, to the depth of four or five feet, with a moorish or peaty soil, which is much cracked, and in many places soft and boggy. Marshes and small lakes abound, filled with geese and ducks. The whole coast is often inundated by the sea, as is proved by the drift-wood and water-marks on the conical sand hills ten feet above their bases. The highest tides on this whole coast do not rise above three feet, and commonly only about twenty inches.

The expedition arrived at Cape Bathurst on the 11th of August, where they had been instructed to deposit pemmican, and erect a signal post. In crossing Liverpool Bay, and at all places where they landed, they were much annoyed by the Esquimaux. The surface of the country about Cape Bathurst is level, or gently undulating, and the sea cliffs are in many places nearly precipitous, and about 150 feet high. The strata, where exposed, were found to be sand and clay Proceeding south-east from Cape Bathurst, the

shores rise to the height of 250 feet, and beds of bituminous shale are seen. The high banks of Cape Bathurst continue to the bottom of Franklin Bay, where the shores again become flat. The expedition always kept near the shore, and landed to cook and eat their meals. Large numbers of white and black whales were seen at sea, and reindeer and Esquimaux on the shore. On the 13th they arrived at Cape Parry, which rises 500 feet high. Islands are numerous along this coast. The cliffs on the points of land presented limestone, columnar basalt, and greenstone slate. At Point Keats, east of Cape Parry, are magnificent columns of basalt, and the cliffs are of flesh-colored limestone. Sandstone boulders cover the shores, which are in general but little elevated above the water.

On the 29th of August Sir John Richardson arrived at Cape Krusenstern, the same geological features continuing to present themselves. Here their progress was hindered by ice; and on the night of the next day, while endeavoring to reach the mouth of the Coppermine River, they were completely involved in drift ice, and could not land. The shores were low, and the country flat and swampy. Finding it impossible to advance with the boats, the party landed on the 1st of September, and walked along the shore, leaving two men in each boat to take care of them. They formed an encampment, and resolved to wait two days for the sea to become clear; at the end of which time, there being no prospect of the boats being able to proceed, it was resolved to leave them, and make their way with the stores, &c., by land to the Coppermine River. On Sunday morning, at six o'clock, on the 3d of September, they commenced their march after reading prayers, each man having a load of from sixty to seventy pounds. The boats and tents left behind were very soon after taken by the Esquimaux.

On the 5th of September the party reached the Coppermine, after crossing Rae River and Richardson's River, not laid down on the maps. The mouth of the latter is in lat. 67° 53′ N., and long. 115° 56′ W. They proceeded up the Coppermine, through a low, well-wooded country, to its western branch, the River Kendall. Crossing this, they left the Coppermine, and directed their course south-west towards Great Bear Lake. The route was full of lakes and swamps, and the snow deep. There was no timber, except on the rivers. On leaving the Coppermine, the country became high and composed of granite, though not mountainous. On the 15th, they arrived at a branch of the Dease River, which runs into the Great Bear Lake, and, taking boats, they arrived at Fort Confidence on the evening of the same day. Here he found comfortable winter quarters; and writing his dispatches to the Admiralty, and his private letters, Sir John Richardson sent them, with eighteen of his party, up the Mackenzie.

Sir John Richardson gives an elaborate description of the manners and customs of the Esquimaux and other Indians, who are found in the northern parts of North America; but we find but little in it that has not already been given to the public. The Esquimaux are not a red race, but approach nearly to white; and, as to stature, are

certainly not the stunted race which popular opinion supposes them to be. "Some of them," says Sir John Richardson, "would be considered to be both tall and stout, even among Europeans." They are emphatically a littoral people, neither wandering inland nor crossing wide seas. They range along the entire vast extent of sea coast from the Straits of Belleisle to Behring's Straits; also, on both sides of Greenland. They are also found on the Asiatic side of Behring's Straits. In addition to what we have stated above regarding their morals, the following extract, which we have hesitated about giving, on account of its indelicacy, will convey a very unfavorable impression as to their notions of decency and hospitality. The casuist and enlightened Christian moralist will note it as a striking example of the shape the moral sense may assume in the absence of the purifying and elevating influences of Christianity.

"Egede informs us that the unmarried Greenland women are modest, both in words and deeds, but that greater laxity exists among the wives, with the connivance of their husbands, who are not jealous. I fear that so much, scanty as the praise is, cannot be justly said in favor of the fair sex on the northern coast. The gestures and signs made by young and old, when they came off in the *umiaks*, (boats,) were most indelicate, and more than once a wife was proffered by her husband, without circumlocution, in the presence of his companions and of the woman herself. I understood, indeed, from Augustus, (our interpreter in 1826,) that such an offer was considered by the nation as an act of generous hospitality; and similar customs are said to exist among the inhabitants of Tartary."*

M. Erman, in his Travels in Siberia, says: "that the same custom prevails among the Tchuktchi, who live on the shores of the polar ocean, west of Behring's Straits. These people are, in fact, of the race of the Esquimaux. The Esquimaux, like the inhabitants of North Siberia, eat raw flesh." For a full account of the Indian tribes of British North America, we refer the reader to the 12th, 13th, and 14th chapters of Sir John Richardson's work.

Fort Confidence, where Sir John Richardson passed the winter of 1848–'49, is on Dease River, three miles from its entrance into the Great Bear Lake, in lat. 66° 54′ N., and long. 118° 49′ W. Though called a fort, it is only a collection of log-houses, without any fortifications. During the winter he recorded thermometrical, barometrical, and magnetic observations, hourly, sixteen or seventeen times a day. Once a month a term day was kept, of thirty-six hours, in which the fluctuations of the magnets were noted every 2½ minutes, and various series of observations were made for ascertaining the magnetic intensity with the magnetometer, the vibration apparatus, and Lloyd's dipping-needle. A register of the winds, weather, and appearances of the *aurora borealis*, was constantly kept, and the time and rates of the chronometers were ascertained by observations of the fixed stars. These observations have been reduced and published.

The party at Fort Confidence passed a pleasant winter, being pro-

* Sir John Richardson's Arctic Exp. in 1848, p. 211.

vided with every thing necessary to make them comfortable. They had a great abundance of the finest fish, venison, reindeer tongues, dried meat, barley meal, flour, sugar, tea, potatoes, pemmican, Zante currants, and large supplies of cranberries, blaeberries, and the fruit of the amelanchier, which afforded them tarts and pies all the winter.

The extreme dryness of the atmosphere, during the coldest parts of the winter, was somewhat remarkable. When the thermometer of Fahrenheit stood at 40° or 50° below zero, a piece of clothing just washed and hung out froze instantly so as to be brittle like glass; but in an hour or two, in the absence of the sun, it was found to be quite dry and flexible. In consequence of the extreme dryness of the atmosphere in winter, most articles of English manufacture made of wood, horn, or ivory, are shriveled, bent, and broken. The handles of razors and knives, combs, ivory scales, and various other things kept in the warm rooms, were damaged in the same way, and from the same cause. The human body also became visibly electric from the dryness of the skin. "One cold night," says Sir John Richardson, "I rose from my bed, and having lighted a lantern, was going out to observe the thermometer, with no other clothing than my flannel night-dress, when, on approaching my hand to the iron latch of the door, a distinct spark was elicited. Friction of the skin, at almost all times in winter, produced the electric odor."

On the 17th and 18th of December, the average temperature for forty-eight hours was 55½° below zero of Fahrenheit. At seven o'clock, P. M., on the 17th, the thermometer stood at 58.9° below 0, of F. The lowest temperature observed was 65° F. This is one of the greatest colds on record. Mr. Saunders records 64½° F. as the lowest temperature observed in Wolstenholme Sound, in the winter of 1850.

On the 1st of December, at Fort Confidence, the sun was just visible for an instant at noon, from an eminence behind the fort. From the 19th to the 29th of December, the sun did not get at all above the horizon. The sky was clear, and the sun's place below the horizon was denoted by rays of light shooting into the sky above the woods. On the first of February the sun rose at nine o'clock, and set at three, P. M., and the days lengthened rapidly. The moon in the long nights was a most beautiful object, it being constantly above the horizon for nearly a fortnight together, in the middle of the lunar month. The planet Venus also shone with a brilliancy unknown in southern latitudes, and the aurora borealis was always visible. On the 20th of April the days had become so long, that there was daylight enough at nine o'clock, P. M., to read by. On the 27th of April the birds began to return from the south.

On the 7th of May, Mr. Richardson left Fort Confidence for the south, on his way home. Before leaving, he organized an expedition under the command of Mr. John Rae, to whom he gave instructions to descend the Coppermine River, and explore, if possible, the shores of Wollaston and Victoria Lands, in search of Sir John Franklin. Mr. Rae proceeded on the 9th of May, 1849, across the portage, be-

tween Dease and Kendall rivers, and down the latter to its entrance into the Coppermine, and thence to the Arctic Sea. He found it quite impossible, on account of the ice, to make the exploration required, and returned to Fort Confidence on the first of September, 1849.

Mr. Richardson's route homeward was across the Great Bear Lake, on the ice, and down the Bear Lake River to the Mackenzie. The rest of his homeward route was the same as before described. He arrived at Liverpool on the 6th of November, 1849, after being absent 19 months, and without accomplishing his objects.

Nor were the two other expeditions sent out at the same time more successful. That under Capt. Ross, after exploring the north shore of Barrow's Straits as far west as Cape Hurd, and also Prince Regent's Inlet entirely, and part of the Gulf of Boothia, and also the western shore of North Somerset as far south as 72° 38′ N., by traveling on foot, at length left for England on the 25th of September, 1849. The expedition sent to Behring's Straits advanced in boats as far east as the Mackenzie, but could get no further on account of the ice.

On Capt. Ross's return to England, in 1849, his two ships, the Enterprise and Investigator, were again sent out to make another attempt by the way of Behring's Straits. The latter vessel passed the straits, and was last seen on the 4th of August, 1850. The Enterprise, unable to penetrate the ice, went back and wintered at Hong Kong, and was to renew the attempt in 1851. The Admiralty also sent out, at the same time, six vessels to Lancaster Sound. Private expeditions also went out at the same time. Capt. Sir John Ross sailed in the schooner Felix; Mr. Henry Grinnell, a merchant of New-York, sent out two vessels, under the command of Lieut. De Haven, U. S. N., and Mr. S. P. Griffin; Lady Franklin, also, dispatched the Prince Albert, under the command of Mr. Forsyth, R. N. Some of these parties have returned. All the accessible parts of the continental coast of America have been explored, and both sides of Barrow's Straits to the farther side of Melville Island, and the land beyond Cape Walker. The only trace that has been found of Sir John Franklin was by Capt. Penny, in 1850, on Beechy Island, on the north side of Barrow's Straits. Here were found several hundred empty meat-tins and other remains, showing that Franklin's ships wintered on that island in the winter of 1845–6. The graves of two men were found, the latest date of which was April 3, 1846. No trace later than this has been found of Sir John Franklin, who left England on the 19th of May, 1845, seven years ago. Expeditions are still out, and all news from the Arctic regions is received eagerly.

It is much to be regretted, that the American publishers of Sir John Richardson's Arctic Expedition have not accompanied it with a map of the Arctic regions. Scarcely any of the places visited are to be found on ordinary maps. This is a serious defect, which detracts greatly from the value of the work. The same may be said of M. Erman's Travels in Siberia, recently published at New-York.

ART. II.—SOUTHERN POPULATION—ITS DESTINY.

A short article in one of the late numbers of the Review, on the "Excess of Negro Population at the South," has induced us to look into the subject, with a view of elucidating as much as possible the vexed question: "What effect will *time*, alone and of itself, produce upon the *relative* increase of population in the negro and white races of the southern states, *should their limits never be extended?*"

The prevailing opinion is, that in the course of not a very long time, the negro race will become too populous to be advantageously employed as slaves; our institutions will therefore languish, and a contest of some sort spring up between that and the white race. To test this opinion, let us first inquire how long it will be before this redundancy will probably ensue? Down to 1840, the negroes and whites of the slave states have increased at pretty much the same rate, viz: three per cent. per annum, or thereabouts. From 1840 to '50, however, a variation appears. The whites increased 34 per cent. in ten years; the slaves 28 per cent., and the free negroes less than 9; so that the whole negro population increased at the rate of 26 per cent. in ten years. This shows an advantage of about *eight* per cent. in favor of the whites. Let us then proceed, first, upon the supposition that the two races will increase henceforth at the rate of 3 per cent. per annum each; then, upon the supposition that they will continue the rates which are manifested by the census of 1850. In the first case, each race will double itself in thirty-three years; in the second the whites will double in about thirty years, while the negroes will double in about forty. What will be the number of the southern population one hundred years hence under these several suppositions?

The present population is 6,207,466 whites, and 3,411,760 negroes. In 1950, then, under the first supposition, it will be 49,659,728 whites, and 27,294,080 negroes. But under the second supposition, it will be 66,212,970 whites and 20,470,560 negroes. The aggregate will be, either 76,953,808, or 86,683,530.

With this population, what will be the number of inhabitants per square mile?

The territory comprised by the slave states amounts, in round numbers, to 900,000 square miles, or 576,000,000 acres. The proportion under the first supposition would, therefore, be about 85 inhabitants to each square mile, or *one* to every seven and a half acres; and under the second supposition, about 96 to each mile, or one to every six and two thirds acres.

How does this prospective density compare with that of other countries at the present day?

The English population numbers 240 per mile; the French, 154; and the Italian some 70 odd. In Massachusetts the density is 127 per mile; in New-York, 67; and in Maryland, 62. According to McCulloch the whole of Europe, with her immense regions of *frozen*

and worthless territory, contains 3,708,871 square miles; and by the "Almanach de Gotha" for 1849, it appears that the population numbers 242,003,357, making an average of over 65 per mile.

From these considerations it appears that one hundred years hence, if the southern population continues to increase till then at its past or present rate, the density will be little over a third of that of England, half that of France, and about forty less than Massachusetts. The two leading questions then recur: First—Will this tremendous increase be the work of a single century? Second—If so, will it amount to redundancy?

No population can increase without a corresponding increase in the production of agriculture. "Subsistence is the parent of future, and the support of present population." Economists have established, that the instinct which prompts man to multiply his species is what may be termed, in the language of mathematicians, "*a constant quantity*," differing essentially from the capacity of acquiring subsistence, which is a *variable* quantity. It appears, therefore, that "an increase of the means of subsistence is the only sure criterion of a permanent and beneficial increase of population." To answer the first question, then, our readers must solve for themselves the problem—Can the slave states, in one hundred years, increase their agricultural produce sufficiently to support comfortably such a population? We believe *they can*, and for the following reasons: Immense quantities of land capable of profitable cultivation are to be found lying waste throughout the South, which are destined to be gradually reclaimed as the population increases. Great improvements are yet to be made in our system of agriculture, and improvements always increase the productive power of labor in any pursuit. An incalculable diversity of employments, and creation of new industrial pursuits, must accompany the growth of population; and the diversity of employments in a community, like the division of labor in a factory, increases the productive power of that community, and thus accumulates capital. So that since there will be thousands of miles more of the soil cultivated, vast improvements made in every art, and numerous advances in manufactures and commerce, it may reasonably be assumed that in one hundred years the southern population may number some eighty odd millions. Will this amount to redundancy?

Doubtless it can be shown how much of the soil there is under actual cultivation throughout the South. At present we can only speak of South Carolina; but what is said of her in this regard, may be said of the other states.*

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* We have made up the following table from the census of 1850, of the quantity of lands improved in a few of the states, and from other sources have given the area of these states:

	Acres Improved.	Total Acres.
Virginia	10,150,000	39,040,000
South Carolina	4,074,000	17,920,000
Alabama	4,387,088	37,120,000
Mississippi	3,489,640	21,520,000
Arkansas	780,333	32,000,000
Louisiana	1,567,998	21,000,000
Texas	635,913	250,000,000

South Carolina contains about 21,000,000 acres, of which but 1,500,000, or thereabouts, are cultivated. Can it be possible that only *one-twelfth* of this state is capable of profitable cultivation? Surely not. One-fourth at least, we should think, might be made to yield an abundant harvest. This would be about 4,500,000 acres, three times the amount now cultivated. What population could this support? We presume at least three times the present population; and probably much more, as we will endeavor to show.

In 1840 the population of the state was 594,398, of which 198,363, almost exactly one-third, was employed in agriculture. Now, if we suppose that three times as much soil would require three times as many people to cultivate it, 4,500,000 acres would require 595,089. But would not this great increase in agriculture be necessarily accompanied by a still *greater* increase of employment in other pursuits? It certainly would. Those states which have introduced manufactures, extended their commerce, and diversified employment generally, exhibit a much smaller proportion of their people employed in agriculture than South Carolina, and it is fairly to be supposed that as the South becomes more populous the proportion of agriculturists to the whole populace must decrease. Among the southern states, Maryland employs about one-seventh of her people in agriculture; Virginia, Louisiana and Missouri about one-fourth; and among the northern states, Massachusetts employs one-eighth, Pennsylvania one-seventh, Connecticut, New-Jersey and Ohio one-sixth, and New-York one-fifth. Now, when the southern population has increased so much as to have reclaimed nearly all the land which can be profitably cultivated, we take it for granted, the diversity of industrial pursuits will be as great *here* as it *now* is in Ohio, New-Jersey, New-York or Maryland; and assume that *one-fifth* of the people will be enough to cultivate the land for the sustenance of themselves and the other four-fifths. This assumption may not reasonably be objected to; for by the census of 1840, it appears that *then* only 1,982,671 out of 7,333,637, or very little more than one-fourth of the entire southern population, was employed in agriculture. If, then, 4,500,000 acres of land in South Carolina will require 595,089 people to cultivate them, and only one-fifth of the population of this state will be sufficient to produce subsistence for the whole, it follows that 2,975,445 people will be comfortably sustained; and this

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The following was published some years ago, but we cannot learn upon what authority:—

Maryland	20	per	cent.	under	cultivation.
Virginia	40	"	"	"	"
South Carolina	40	"	"	"	"
Georgia	40	"	"	"	"
Alabama	20	"	"	"	"
Mississippi	50	"	"	"	"
Tennessee	50	"	"	"	"
Kentucky	40	"	"	"	"
Texas	15	"	"	"	"
Florida	15	"	"	"	"
North Carolina	25	"	"	"	"
Louisiana	60	"	"	"	"
Arkansas	25	"	"	"	"

[Eds.

would result in the proportion of about 90 inhabitants per mile throughout the state.

If the same may be conjectured of the whole South, it would appear that 144,000,000 acres, one-fourth of the South, would require 19,042,848 people to cultivate them; and the whole population being five times as much, would amount to 95,214,240, or 105 per square mile. But since this population will be comfortably supported, for we have supposed that subsistence will increase apace with capital, it cannot be urged that there will be a redundancy. Therefore, if the southern population continues for one hundred years to increase at its present rate, we need not apprehend redundancy.

What may be expected at the end of the succeeding hundred years, viz: the year of our Lord *two thousand and fifty?*

In the year 1700 the English population was about 100 per mile, considerably more than ours can be a hundred *years* hence; but in 1800 it had nearly doubled, and in 1850 it is stated to be 240 per mile. It is by no means likely that our population, when it approximates to the density of the English in 1700, will increase as rapidly; for England is the homestead of an immense empire, and may be regarded as a vast city, whose suburbans are supplying her from all the continents of earth. And as she, having a population of 100 per mile, and enjoying so many inducements to the increase of population within her immediate limits, could scarcely double it during the whole of the eighteenth century, and only increased it fifty per cent. during the last fifty years; it may be justly deduced that the southern people, after having reclaimed the great bulk of their arable land, and having reached a proportion of eighty or ninety inhabitants to every square mile, which we have supposed *might* be consummated in one hundred years, but which will *probably* take up two centuries or more, will settle down to a rate of increase, the only exponent of which will be the degree of improvement that may supervene, and which we have every right to maintain will be less than that of the English population. After comparing all things, and to come to an end of these conjectures, we think it may be laid down as a probability, that the southern population will not exceed, even if it reaches, the present density of the French, for two or three hundred years to come; and the ratio of population to territory in England is greater than will ever be witnessed as an average in these states.

But the chief apprehension seems to be, that the negro race will increase more rapidly than the whites. It is not the aggregate population which is particularly dreaded—it is the *relative* increase. However, besides the numbers laid down in the last census, there are many forcible reasons why it may be urged that this apprehension is groundless.

All impediments to the natural increase of population may be classified as *preventives* to propagation, or *checks* to growth—the first comprising all those causes which prevent the birth of living children, and the latter all those which produce death after birth. From all the data we have at command, it would seem to be placed beyond question, that there are comparatively more births in the negro than the white race, and this is conclusive proof that preventives to propa-

gation are not so effectual in the former as the latter. But from the same sources it does appear the checks to growth are fewer and less effectual in the white race. If we divide life into three periods, as for instance, from birth to maturity, from maturity to the beginning of decline, and from then to death; or say, from birth to twenty, from twenty to forty-five, and from forty-five to death; it appears there is much more negro mortality during the first period than white, and more also during the first half of the second.

It is for those of the readers of the Review, more competent, to say whether this circumstance is of material consequence. To our mind it certainly does appear to be. When an infant is snatched from a community, it is like extinguishing a lamp which has been just filled and newly trimmed; but when the man who has reached a green old age is taken from the world, it is like the gentle going-out of a lamp at the approach of day, because it has consumed all of its "midnight oil," and its charred wick can no longer feed the unwilling flame. He is,

> "Like one who wraps the drapery of his couch
> About him, and lies down to pleasant dreams."

Like the morning sun, as it

> "Checkers the eastern sky with streaks of life,"

and wakes up the world for another day, the young child brings with him in his little loins the germ of another generation; but like the setting of the pale wan moon down into the calm bosom of the deep, is the old man's death, who, having lived out his life, sinks down with placid brow into the grave.

It cannot, we imagine, be treating lightly of our fellow-mortals to say, that some of them, when they come to die, prove no check to the growth of population; or at least, their death is a less check than that of others. It may, therefore, with propriety be said, that the death of very aged people is the least of all checks to population; the death of young people who have not reached the age at which they may propagate their species is the greatest possible; and the death of those between these extremes vary between them in its effect.

It cannot be questioned that the great mass of mankind are born of parents who are between the ages of twenty and forty-five; it is certainly the case as far as *mothers* are concerned. When, therefore, those between these ages die, they may be supposed to have multiplied their species to a certain extent according to their individual ages, and their demise may be regarded as an *interruption* to the work which they had commenced. Their loss is, therefore, greater than those who have passed the propagating age, while it is less than those who have not yet reached it. And if further classification might be made, perhaps the following is quite correct:

1. The greatest check is the death of those under twenty.
2. The next greatest is that of single people over twenty, but under thirty.
3. " " married people within the fruitful age.
4. " " single people over thirty, but within the fruitful age.
5. " " all people who have passed the fruitful age.
6. The least of all " extremely aged people.

Now, if this classification is admissible, what will the statistics of the southern population exhibit when analyzed according to it?

The only very reliable census we have at hand, is that of Charleston, for the year 1848, which was compiled with great care and accuracy. It appears from this, that during the year there were:

White births, 3.27 to every 100 white inhabitants.
Negro do. 4.40 " negro inhabitants.
Negro excess, 1.13 per ct.

From 1841 to 1848—

White deaths under twenty were 32.55 pr. ct. of all white deaths.
Negro " " 49.74 " negro "
Negro excess, 17.19 per cent.

From 1822 to 1848—a period of twenty-six years—the mortality compared thus:

White deaths under twenty, 28.74 pr. ct. of all white deaths.
Negro " " 47.57 " negro "
Negro excess, 18.83 per cent.

From these figures it appears, if we take the births during the year 1848 as an average, that where one hundred negroes are born, about ninety-nine whites are, supposing the aggregate population of the two races to be the same; but for every hundred whites who die under twenty, one hundred and eighteen negroes die. To illustrate this, let us suppose a community composed of exactly the same number of whites and negroes, and that every year the same number of each race died; say that, twenty years ago, one thousand white children were born: that year there must have been one thousand and eleven negroes born; now if at the end of this, the twentieth year, we find that four hundred of these whites have died, how many of the negroes will have died? why, four hundred and seventy-two; so that out of one thousand whites, born twenty years ago, six hundred are now alive, and capable of increasing the race; but out of the thousand and eleven negroes only five hundred and thirty-nine remain.

We will not occupy any further space than to express the hope of seeing something from the pen of some of the correspondents of this Review, setting forth correct statistics on this subject, and giving the results of a more perfect and elaborate investigation than we feel authorized to venture upon now. We are quite satisfied that an error is abroad which is calculated to injure our institutions and our altars. The prevailing idea, that a contest of races is destined to spring up as southern population increases, can, we sincerely believe, be thoroughly set aside by facts and principles which only need to be duly considered and impartially applied. It is exceedingly doubtful whether there will ever be another acre of land added to the slave territory of this continent; it is questionable whether there is any need of more; but, be these as they may, it is clear the *destiny* of the slave states is in the hands of the *white race* of those states. If six millions of freemen, with wealth, power, and territory enough to establish a vast empire equal to one fourth of all Europe—

cultivating a soil the greater portion of which may be said just to have been reclaimed—having facilities for introducing every industrial pursuit which a growing people can need, and with the full knowledge that the civilized world is regarding them with an evil eye—cannot cease to complain of the blessings which nature is heaping upon them, and direct their energies towards their own improvement, and against the foul machinations of their enemies who are mortal as themselves, it is greatly to be feared they are not worthy of their wealth nor suited to their calling. If all the money which is spent in political conventions and caucuses, stump speeches and elections, controversies and office-hunting, which demoralize the southern mind, and is preparing it for lasting subjugation, was devoted to improvement at home, the encouragement of southern art and southern industry, the division of labor and the diversity of employment, we would be a more united people. If all the money which is spent in northern schools and colleges, cities and watering places, taverns and steamboats, as well as shops and factories, was kept at home for the building up of our own seminaries, our own literature, our own amusements and benefits, we would be a happier and a better people. Talk of redundancy! Why, in the palmiest days of Rome five acres of land was the actual allotment to every agricultural family, and in Flanders *now*, a farm of five acres is a comfortable homestead. Yet we have shown that when the southern population, which is about 10 per mile, becomes nine times as dense as it now is, each individual, white and black, will average over seven acres; or, at the very lowest calculation, twenty-one acres for a family of three. There is a public sentiment abroad in the land which we have to fear. Let the enlightened reader cast his eye over the civilized world—how many distinct parties does he not see, which abhor our institutions? But look at home—is there a single spot upon which that eye can rest, and contemplate a *southern party* which is not torn, lacerated, and bleeding from suicidal wounds?

ART. III.—SIBERIA.*

THERE is no part of the world, if we except, perhaps, Central Africa, so little known as Siberia. This is due, in a great measure at least, to its remoteness from the most civilized portions of the world, the extreme coldness of its climate, and its absolute or supposed want of novelties, of any kind, sufficiently attractive to draw the traveler within its borders. Some few have ventured thither, at wide intervals of time; and these, for the most part, have been men who have sought that remote and forbidden quarter of the globe as zealous, self-denying votaries of science, eager to solve some long-mooted scientific question, or to make some valuable contribution to our present stock of

* TRAVELS IN SIBERIA; including Excursions northwards down the Obi to the Polar Circle; and southwards to the Chinese Frontier. By ADOLPH ERMAN. Translated from the German by W. D. Cooley. 1850. 2 vols., pp. 800. Philadelphia: Lea & Blanchard.

scientific information. Few, if any, of the numerous tribes of flying tourists, who are constantly skimming over every inviting portion of the globe, and writing books about their adventures, have ever dared to turn their thoughts on Siberia. The very thought of it is, indeed, enough to freeze one to death, or at least to chill one with horror; for the very name of Siberia, apart from its eternal snows and ice, has become a synonym for horrible cruelty and injustice. It is never pronounced without calling up in the mind pictures of the sufferings of the thousands of poor exiles who are now dragging out their miserable lives in the mines of that horrid country.

The latest, and probably the best scientific work that has appeared on the subject of Siberia, is that of M. Adolph Erman, which acquired for him the medal of the Royal Geographical Society of London. In conferring this medal, Sir Roderick Impey Murchison used the following language:

"I have already said more than enough to convince any one who has not studied the works of M. Erman, that the council has most wisely selected him to be the receiver of our patron's medal; and there can, indeed, exist no doubt that, with the exception of the great Humboldt himself, it would be difficult, if not impossible, to find a single man in the broad field of explorers, not already honored with our medal, who is more richly deserving of it."

This is certainly very high praise; but if by it Mr. Murchison intended to compare Erman to Humboldt, some allowance must certainly be made for the errors too often incident to great men, and from which even Royal Geographical Societies are not wholly exempt. M. Erman must do something more, as a scientific traveler, than simply make a journey to Siberia, and publish his undigested notes of travel in two volumes, before he can be compared to the great Humboldt. He has, however, in the work now before us, furnished us with much valuable information, without committing any of the fashionable follies of the superficial, foppish, and gossiping tourists of the day.

The government of Norway having determined to fit out a scientific expedition, under the direction of Professor Hansteen, so justly famed for his researches into the theory of terrestrial magnetism, with the view of enabling that philosopher to make a series of magnetical observations in the interior of Siberia, M. Erman was permitted to become a member of the expedition. He left Berlin and proceeded to St. Petersburgh, where he met Prof. Hansteen and the others of the scientific corps. His route from Berlin was by the way of Dantzic, Konigsberg, Memel, Mittau, Riga, Dorpat, and Narva, making magnetical observations as he advanced, and also giving a scientific description of his route; but as Siberia is the subject of this paper, and as his route, as well as all parts of Russia, have been often described, we shall pass over, as briefly as possible, the few pages of M. Erman's narrative, in which he describes his journey to the dividing line between Europe and Asia.

The expedition left St. Petersburgh on the 11th of July, 1828, and

took the route to Moscow, making astronomical and magnetic observations at all their stopping-places. They arrived at Moscow on the 20th of July, and remained there seven days. From Moscow their route led them to Vladimir, on a branch of the Oka, and thence to the great town of Nijnei Novgorod, the church towers of which had been visible for a great distance. On the 4th of August, the day previous to their arrival at Nijnei Novgorod, they passed through Sudogda, through which, from subsequent observations, they found that the line of no declination passed. It will be recollected, that the same line for the western hemisphere passes near our city of Pittsburg, Pennsylvania.

Nijnei Novgorod stands at the confluence of the Oka and Volga rivers, about southeast of St. Petersburgh, and near the centre of European Russia. It is the seat of the great annual fair in Russia, to which merchants from all parts of the empire assemble with their merchandise. On the arrival of our travelers, they found the fair there actually going on, and were struck with the vastness of the multitude, the motley character of the people, and the variety of the strange costumes that surrounded them, as well as by the number and strangeness of the foreign tongues spoken, overpowering and extinguishing the Russian.

"We found ourselves," says M. Erman, "among wooden booths, arranged in quadrangles, and numerous enough to satisfy our expectations of a great fair. This part is given up to the retail trade. The usual variety of a Russian bazaar was to be found here, but on a scale far surpassing in magnitude anything we had seen before. We were astonished, however, to find that these magazines, which taken together would have made no inconsiderable town, were but temporary *appendages* to the far more colossal market.

"Beyond the space occupied by the wooden magazines are solid stone edifices of a single story, surrounded by colonnades, and roofed with sheet iron painted green. These are all warehouses, and form sixty-four rectangular blocks of building. In the middle of these stands a lofty and noble edifice, occupied by the officers who are charged with the superintendence of the fair. The ground floor of it becomes, at this period, the post-office, which is not to be easily matched for the wide extent of country embraced by the communications passing through it; for the letters received by the Armenian and Bokharian merchants, from their remotest Asiatic correspondents, meet here with others from all parts of Europe.

"The inner range of warehouses contains articles of European luxury. In those filled with the works of the French *modistes*, or with the productions of St. Petersburgh, or Moscow, we might fancy ourselves transported into the midst of some European capital, if it were not that at every step the passers-by remind us of the preponderance of Asiatic traffic. Books and maps have a row of warerooms to themselves. Then follow the depots of *Obrasa*, or Greek holy images, of every shape and size, as well as of amulets, wax candles, and various matters used at funerals, or in other solemnities of the Græco-Russian Church. Most of the holy images are made in the Ural, but some of them are the work of self-taught peasants, throughout the villages, who think that a peculiar merit attaches to this kind of industry. The dealers in these articles both buy and sell by retail, and their business, in conformity with popular notions, is called "truck," because it is not deemed right to buy matters of a sacred character for

money; barter is only allowed in such articles. The precept of the Greek Church, which allows of only linear and not relieved representations of the holy personages, regards merely the uncovered part of the figure, but the dress may be in relief, and is usually adorned with gold or silver leaf fastened on the wood. Hence it is that the pictures of holy families and saints offered for sale have frequently only the faces and hands painted, the rest being left unfinished, so that the purchaser, in completing the decoration of the picture, is at liberty to consult his own piety and discretion, and to dress and gild it according to his means. The complexion of these images is always a dark brown; but the obliquity of the eyes, which is particularly observable in the pictures of the virgin, shows that the Mongolian physiognomy was that which was most familiarly known to the original designers of these portraits.

"The outer range of buildings in the market is occupied chiefly by foreign nations; south-eastwards, towards the Oka, are the warehouses of the Greeks. North-westwards the Armenians have a very extensive quarter to themselves."

We cannot give a more extended quotation, but this is sufficient to give some idea of the character and importance of the great Russian fairs. Merchants throng to this at Nijnei Novgorod not only from all parts of the Russian empire, but also from Independent Tartary, Bokhara, Afghanistan, Thibet and China, bringing cotton and silk fabrics, shawls, and all the most costly products of the East, and carrying away with them, in turn, European goods of every description. Many of the eastern merchants come a distance of from 1,500 to 2,000 miles. The traders from Bokhara bring goods which they have received on credit from wealthy capitalists, who are to be paid on the return of the expeditions with thirty per cent. more than the value of the goods in Bokhara. In case of loss from fire, or robbery, the traders are not released from their contract; and when such misfortunes happen to them, they prefer settling in Russia to returning home to Bokhara.

One of the chief objects of trade between the Bokharians and Russians, is the supplying the latter with *cotton*, partly raw and partly spun. Vast quantities of it are brought to the great annual fair at Nijnei Novgorod. It is not a century since the Russians generally entertained the most fabulous and extravagant notions of the origin of cotton. A story was current among them, that it was the product of a zoophitic plant called *baranez*, or lamb-plant.*

The German edition of Herberstein, who fully believed the fable, adds, that "the Boranez has a head, eyes, ears, and all the limbs like a sheep."

The Bokharians receive for their cotton large quantities of bar iron from the Ural mountains. A large trade is carried on at the fair in tea from China. The Tartars bring peltries of all kinds.

Each of the different nations congregated together at this great an-

* Herberstein quotes a Russian writer as follows:—"Vidisse se (circa mare Caspium) semen, melonum semini paulo majus et rotundius, ex quo in terram condito quiddam agno persimile, quinque palmarum altitudine succresceret * * * quod eorum lingua *Boranez*, quasi agnellum dicas, vocaretur * * * pellem subtilissimam habere, qua plurimi in eis regionibus ad subducenda capitis tegumenta uterentur * * * hanc rem minus fabulorum puto, ad gloriam Creatoris, cui omnia sunt possibilia."

nual fair, has its own place of religious worship—the Armenians their churches, and the Mohammedans their mosques, from the minarets of which are heard, several times a day, the voices of the priests calling the faithful to prayers.

Among the motley groups of the thousands that fill the passages of the fair are always seen the people, distinguished by their peculiar appearance, called *Mordvi*. They are aborigines of the country, and are as distinct a people from the Russians as our American Indians are from us. They are allowed to retain their ancient customs. Among their remarkable peculiarities may be mentioned their unwillingness to put animals to death, and their love of leeks, onions, and bulbous roots of all kinds.

The late great "Exposition" at London did not equal in extent one of these common *annual* fairs at Nijnei Novgorod. "The latter," says M. Erman, "contained, in that part of the fair which is built of stone alone, 2,522 store-rooms, to each of which is attached a chamber for the owner of the goods to live in. Besides these, there are 1,500 wooden booths. The number of traders at these fairs is not less than 600,000 annually.

Nijnei Novgorod was formerly the most important city in the Russian empire. In the 15th century its population is said to have been 400,000; it is now only about 18,000. In the 15th century, London, Novgorod, Bergen and Bruges were the four principal foreign depots of the Hanseatic League; but the barbarities and misrule of Ivan Vassilievitch II., in 1570, proved fatal to Novgorod, and consigned that great emporium to hopeless decay. During the 12th, 13th and 14th centuries, Novgorod formed the great *entrepot* between the countries east of Poland and the Hanseatic cities, and its wealth and power seemed so great and so well established, and the city itself so impregnable, as to give rise to the proverb—

"Quis contra Deos et magnam Novogordiam."

The ruins scattered about its present site show how vast it once must have been, with its walls of stone and gates of bronze.*

Leaving Nijnei on the 9th of August, M. Erman pursued his journey in a north-east course towards the Ural Mountains. The roads throughout the Russian empire are generally good, being repaired by the government. Mile-stones, or verst-stones as they are called in Russia, measure the distances from place to place. The Russian verst is about 1,167 yards. At short intervals, in many parts of Russia, are Crown post-houses for the accommodation of travelers. The traveler also observes along the way another class of large buildings in Russia, which are peculiar to that country. They are called *ostrog*, and are intended expressly for the reception and lodging of exiles on their way to Siberia, trains of whom are constantly seen dragging their weary limbs slowly along towards the dreary wastes and mines of that wretched country. After leaving Nijnei

* Schnitzler, La Russie, pp. 152-174.

Novgorod, every post-house has its ostrog standing opposite. The ostrog consists of a large building, containing numerous quadrangular rooms side by side, and surrounded by a fence of palisades. Nijnei Novgorod is the general rendezvous of exiles from all parts of the empire, where they are formed into gangs and marched towards Siberia, all on foot except the sick and infirm. There are at present in Siberia about 100,000 exiles, one-fourth of whom are women.

The next place arrived at by our travelers was the city of Kazan, about four miles from the Volga, and with a population of 57,000. It has a university with 70 principal and subordinate professors, and about 250 students. Its principal object is to supply instruction in the eastern languages, or in Arabic, Persian, Turkish, Tartar, Mongul and Chinese. The city has also a theological school, with a gymnasium, an observatory, a grammar school, a Tartar school and a normal school. Several journals and publications issue from its press, among which are comprised some works in the Turkish language. There is also in the city a great clothing manufactory employing 1,000 people; there are also manufactories of cotton, hardware, earthenware, tiles, leather, soaps and ardent spirits. It carries on an extensive trade on the Volga and Caspian Sea. About 15,000 of the inhabitants are Mohammedans; the rest Protestants and Greek Church Christians.*

Perm, near the foot of the Ural, and the centre of the mining region, is the next most important place in the route pursued by M. Erman. It contains about 10,000 inhabitants, and is built mostly of wood. It is the seat of a bishopric, and has several public establishments. Its inhabitants are principally employed in smelting the iron, copper, and other products of the adjacent mines. There are about 100,000 men employed in the mineral region of Perm. The climate is, of course, very severe, it being in lat. 58° N. The soil does not produce enough food for the consumption of the inhabitants.

On the 28th of August, M. Erman left Perm to pass over the Ural to Yekaterinburg, traveling in nearly an east direction. The ascent was generally undulating, but the elevation not rapid. On the 31st of August, when between the 14th and 15th verst-stones from a place called Kirgishansk, the guides informed the company that they were on the boundary of Asia.

"For the boundary between the two continents," says M. Erman, "the Russians have here very arbitrarily selected an inconsiderable chain of hills, which rises about 200 feet above the surrounding country, (its total elevation being from 1,250 to 1,350 feet,) and, running north, forms a secondary water-partition, such as we had frequently seen on the preceding portion of our journey.

"In the days of ancient Greece, a point to which universal consent assigned so much importance, would not surely have been left without some striking monument; for even on the isthmus of Corinth the bounds of two comparatively petty provinces were indicated by a pillar, having inscribed on one side: '*This is Peloponnesus, and not Ionia;*' and, on the other:

* Schnitzler, La Russie, p. 671.

'*This is Ionia, and not Peloponnesus.*' But the fact, that at the present day the boundary between two great divisions of the earth is not thought worthy of any special mark, may be hailed as a pleasing sign of the greater facility of movement which is now enjoyed by mankind. Nevertheless, we left behind us, in a sportive mood, a memorial of our visit to this point, which, for the imagination of the traveler at least, is not without some interest. We inclosed in a bottle a paper containing the names of the travelers and the object of their journey, written in Latin, and buried it in the wood on the south side of the road. The idea of the discovery of this memorial at some distant date was certainly very agreeable at the moment."*

After traveling a few miles from the boundary-line, M. Erman found the elevation to be 1,600 feet. This was the greatest elevation attained in crossing the mountains from Perm to Yekaterinburg, in lat. about 55° N. They found the highest mountain summits covered with tall firs. "Our guides," says M. Erman, "had *remarked that the snow* lay longer in the spring on these summits than on the road; but on the other hand, they positively declared that on no one of them did the snow remain throughout the summer; so that it is not only possible to make a road over the Ural, *which rises nowhere beyond an elevation of* 1,600 *feet*, but it is manifest that in the neighborhood of this pass there is no mountain-top which rises 500 feet higher."

This statement of M. Erman, in regard to the elevation of the pass of the Ural Mountains, is worthy of note. It is probably correct, as he was engaged in a scientific expedition, and was furnished with the most accurate instruments. Malte Brun fixes the elevation of the highest peaks of the Ural at 4,000 feet; and Schnitzler and others at 6,400.

On the second of September M. Erman reached Yekaterinburg, which is built on the shores of a small lake called Iset, and on a river of the same name, at an elevation of 850 feet above the sea. Here they compared all their magnetic observations taken from their departure from St. Petersburgh, and found that they all confirmed, as far as they went, the theory of two magnetic poles in each hemisphere. They found that the deviations of the magnet, whether in regard to the dip, variation, or intensity, had been continuously affected by a change of geographical position. With any given direction of route, the series of numbers indicating the function of any one of those three elements was found to proceed not *per saltum*, but by gradual transitions, which must be considered as a proof of conformity to some general law. As they advanced eastward, on the same parallel, there was a rapid increase of the intensity—a proof of their approach to some predominating centre of attraction—the Asiatic magnetic pole. On the other hand there must have been observed a regular diminution of the magnetic force or intensity, as they receded from Parry's North American magnetic pole, if the theory of an Asiatic pole was not correct.

M. Erman continued at Yekaterinburg and in its neighborhood, visiting the mines and making magnetic observations, until the first of October. We see nothing in his explorations of the mining regions

* Erman, vol. i., p. 153.

of the Ural that have not before been given. From Yekaterinburg he made an excursion to the north along the Ural. He found the country thickly covered with forests of pine of different varieties. The gold and platinum found in this region lie in bed of pebbles, partly at the bottom of valleys, and in the alluvial plains bordering the rivers, among the detritus of hornblende and feldspar, collected between the transition-limestone rocks which bound the valleys. The quantity of gold in the undisturbed veins of quartz is much less than in the sedimentary beds.

Bones of elephants, belonging to an early period of the world, are found imbedded in the metalliferous sand and stones along the valley of the Tura not far from Yekaterinburg.

Yekaterinburg contains about 1,000 families. Its external aspect is that of European manufacturing towns. The streets are broad and elegant, filled with spacious stone mansions, inhabited by merchants and the proprietors of mines. "The elegance of the houses in this place," says M. Erman, "would do credit to the merchants of many European cities; while their internal comfort is fully in keeping with the exterior. Many of their owners are still serfs, and obliged to pay an almost princely tribute to their lords; but this they hardly consider a grievance."

The rest of the population consists of the officers connected with the mines, who are educated at St. Petersburgh. The government establishments consist of mills, magazines, factories, guard-houses, &c.—all built in handsome style. There is also a military post, the soldiers of which are chiefly engaged in preventing evasion of the tolls, which merchants who visit Irbit are required to pay here, and in looking after exiles who pass through the town.

There are public gardens in the middle of the city—the walks of which are bordered by rows of tall bird-cherry trees, (prunus padus,) which are indigenous to this region.

M. Erman was at Yekaterinburg on the third of September, the anniversary of the accession of the reigning emperor at that time.* The present emperor, Nicholas I., came to the throne on the first of December, 1825, which is, of course, the day celebrated as the anniversary of the Czar's accession, throughout his dominions. It is a religious festival. On this occasion it is customary in all Russian towns, as on every solemn holiday, for the principal inhabitants to attend the person of highest rank among them to his house, when divine service is concluded, where the honor thus conferred is acknowledged by a public breakfast or dinner.

M. Erman visited Neryansk, a place north of Yekaterinburg, containing 10,000 inhabitants, most of whom are serfs. All of the mines in the Ural are worked by serfs. They labor from 4½ o'clock, A. M. until 7 o'clock, P. M., and their wages are 8¼ kopeks (less than a penny) a day, or about nine Prussian dollars per annum. They have besides,

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*These *Travels in Siberia* were made by M. Erman in 1827, and are now for the first time, in 1850, published in America. They have not, however, lost their value, as regards Siberia.

their daily rations from the public stores. The allowance for a married serf is eighty pounds of rye meal per month; for an unmarried one, under sixteen, it is half that, and for a woman the same. The serfs have each his own house, and some have cows and horses, with the right of cutting hay. Both men and women work in the mines, the former in digging, and the latter in carrying the ore.

The gold, silver, iron, copper, and lead mines of the Ural Mountains are considered quite inexhaustible. The value of the products of the mines annually, is more than $25,500,000. Three-fourths of this sum is derived from the gold and platinum. Some idea may be formed of the immense quantities of the metals of all kinds, transported down the rivers from the mountains, from the fact that the entire amount of tonnage employed is equal to that of 361 vessels of 400 tons each. All the products of the Ural are conveyed to St. Petersburgh by water. The route is down the Biela and Kama to the Volga, then up the Volga to Tver; thence down the Tverza to Lake Ilmen; thence down the outlet of that lake to Lake Ladoga, and from thence to St. Petersburgh—a distance of more than 3,000 miles. This whole route is a natural water-course, navigable at all places except at one point between Tver and Lake Ilman, where one of the natural channels has been widened, and a supply of water secured by sluice-gates. The navigation in this long route is in many places dangerous. At Bronitsui there are rapids which prevent all boats from returning up stream. They are therefore broken up at St. Petersburgh. But for these rapids there would be a free, natural passage from St. Petersburgh to the foot of the Ural Mountains, and to the Caspian Sea and all the countries bordering on it.

The communication with the Black Sea is interrupted by the portage between the Volga and Don, at Tsaritsuia. The distance across the neck, or *volok*, as the Russians call it, is forty miles. The boats are taken in pieces, and carried with their cargoes across the Don, where they are re-constructed. If Nicholas had a particle of the spirit of John Bull or Brother Jonathan in his composition, this *volok* of forty miles, between the Don and Volga, would soon be annihilated. A tenth part of the money that he has spent in trying to subdue the Circassians, would make all his rivers navigable, and connect St. Petersburgh with the Black Sea.

The level of the Don above the Volga is ascertained to be 175 feet; and that of the Black above the Caspian Sea, 83 feet.

Before narrating the continuance of his journey towards the interior of Siberia from Yekaterinburg, M. Erman pauses to communicate some particulars regarding the inhabitants in the neighborhood of Yekaterinburg—the Bashkirs. They first attracted his notice from his finding that they were a portion of the usual guards of the exiles who pass through Yekaterinburg. Parties of these wretched exiles are a very common spectacle in that town. About one hundred pass through it per week—the women generally in wagons, and the men following two and two on foot. The latter, during their stay in the town, have usually chains on the leg. Their guards are Kosaks of the Ural, as they are called, and a company of Bashkir militia. These Bashkirs are entire-

ly different in aspect and manners from the Russians. They retain their national pointed broad-brimmed hat of white felt, and close tunic of cloth of the same color, with red embroidery on the edges. Their arms are a pike and a sword, besides the bow and arrow. They are one of the aboriginal Siberian tribes, and are the chief inhabitants in the south-western part of Siberia. They consist of three cantons, over each of which there is a hereditary chief. These Bashkirs are the only aboriginal Siberians, who lead a mode of life regularly alternating from the nomadic to the fixed. They have a permanent village of wooden huts on the borders of some wood, where they pass the winter. As soon as spring opens, they betake themselves with their horses and herds to the plains, each family carrying its tent-cloth of hair. They pitch their tents in military order, leaving their cattle to wander. The men are always in their saddles. They live on mutton, mare's milk, fish, game, and the fruit of the bird-cherry. M. Erman endeavors to prove that the Bashkirs are the descendants of the ancient Agrippæi, described by Herodotus as occupying the plains north of the Caspian Sea.

The use of the Arabic characters was introduced with the Mohammedan religion among the Bashkirs; but previous to that they had characters of their own. The Russian conquerors of Siberia found engraved on the rocks, in the valley of the Puishma, inscriptions of the Bashkirs, as is supposed, indicating a highly perfected written language. It is very remarkable, that an inscription in the same characters was discovered many years ago engraved on rocks on the Taunton river, forty-five miles from Boston, Mass.*

On the 30th of September, M. Erman began to prepare for his route into the north of Siberia. On applying at the stores of Yekaterinburg for winter covering for their feet, they were recommended to dust the inside of their boots with powdered quick-lime, so that the increased action of the skin might counteract the effects of the cold. Whether they followed this strange prescription we are not told. On their way to Tobolsk, they stopped at a little town called Mokrova, where they were entertained by the agent of the Russian-American Company. They were startled at the phosphoric luminous appearance, in the night, of the rotten wood at this town. On visiting the market, which they found well supplied with fish, they were surprised to see the Russians eating roe and salmon entirely raw, without any salt even. The Russians deem them more delicious when raw than when cooked, and eat them as provocatives of appetite. "Later experience," says M. Erman, "taught us how much the influence of the cold tends to favor the adoption of raw animal food; so much so that it hardly requires the addition of salt; in fact, during the intense frost, the raw flesh, even of warm-blooded animals, loses its repulsive qualities."

Our travelers continued their journey down the Tura to the Tobol, which they followed down to Tobolsk, where the Tobol unites with

* Philosoph. Transact. 1714.

the Irtuish. They arrived at Tobolsk on the 7th of October. Its lofty, white buildings, and the towers of its churches and monasteries, were visible before they were within six miles of the city. They crossed the Irtuish in a ferry-boat about two o'clock, P. M., and entered the city. A heavy snow-storm was raging at the time. As there are no such things as inns or hotels at Tobolsk, travelers, on entering, are obliged to appeal to old bonds of hospitality, or in the absence of these, to new ones formed through the kindness of the chief civil functionary, or police master of the city. The host never asks remuneration, though he will sometimes receive it when forced upon him.

Tobolsk is in lat. 58° 11′, and long. 68° 6′ E. The population in 1835 was 15,379. The city is built partly on the low grounds along the Irtuish, and partly on a high hill back, commanding an extensive view. It is surrounded by a strong brick wall, with square towers and bastions. When approached from the west, it has a remarkably fine appearance, and it really contains some very good buildings. Along the banks of the river are suburbs inclosed by a ditch and palisades, mostly inhabited by Tartars. In 1835 the city contained 18 churches and 1,762 houses, of which 25 were of stone. The streets cross each other at right angles, and are mostly paved with wood. Such pavements are common in Russian towns. They are rather causeways made of logs than pavements.* The most remarkable public edifices are the Cathedral, in the Byzantine style of architecture, with five cupolas; the archbishop's and governor's palaces, the monastery, and a large hospital. The city was founded in 1587, and is the residence of the governor-general of Western Siberia, comprising the governments of Tobolsk and Tomsk. It has two ecclesiastical and several public schools, together with various charitable institutions. No convicts or malefactors are sent thither from European Russia, although persons banished to Siberia, for political offences, are sometimes permitted to reside in Tobolsk. The climate is very severe, so much so as sometimes to freeze mercury; but the dress and houses of the inhabitants being fitted to resist the influence of the cold, it is not so disagreeable as might be supposed.

The rivers furnish the city with an inexhaustible supply of fish; and provisions, furs and game of all kinds are cheap and abundant. Shops, theatres, and places of public amusement are numerous. Tobolsk, being on the great road from Russia to China, is well supplied with most European and Chinese goods. French wines, English porter, and books of all kinds, are to be met with. Dobell says, that "the society of Tobolsk may fairly stand a comparison with that of some of the best provincial towns in Russia. Many of the inhabitants are descendants of the Swedish officers sent there after the battle of Pultawa, to whom the city is mainly indebted for its superior civilization.†

* The incessant joltings of the Russian log-ways, on the public roads, are said to bring on a complete paralysis of the mental faculties of the Russian postillions in a few years. M. Erman had to leave one of his postillions at Yekaterinburg affected by this disease.

† Dobell's Travels in Siberia.

The magnetic observations at Tobolsk, and since leaving Yekaterinburg, fully confirmed the theory of two magnetic poles. The intensity of the magnetic force had increased greatly.

There are no serfs at Tobolsk; the servants are, in general, Russian exiles, who attach themselves to families. "The ferry of the Irtuish," says M. Erman, "is big with fate for the numerous exiles who annually cross it, for it is this passage which is first considered as a symbol of political death; but for others, also, it enjoys a much bruited importance, in consequence of the law which grants to every one who offers himself for public service, in Siberia Proper, a step in promotion on crossing the Irtuish. Hence the passion for rank drives a crowd of officers annually from the capitals of the mother country to Tobolsk, and thence further into the interior of Siberia, where they are required to reside three years, in order to enjoy the advantages of the law.

It was the intention of M. Erman, on arriving at Tobolsk, to proceed immediately down the Obi to the Arctic Ocean, for the purpose of making scientific observations, and of acquiring information regarding the inhabitants, climate, geography, geology, &c., &c., of that remote and almost unknown portion of the globe. He found, however, that there was not time to pass down the river by water, as he intended, it being too late in the season; and he concluded to remain in Tobolsk until the river was frozen, and then to perform the journey over the ice in sledges. In the meantime he occupied himself in observing the manners and customs of the people of Tobolsk, and of those of Western Siberia generally. He describes, while treating of the trade carried on by the Russians with Independent Tartary, the predatory people of the northern parts of that country, who are called Kirgis. With these people, traffic in Russian captives is extensively carried on, and they even sell one another. The father has been known to sell into captivity to the Russians, who encourage the trade, his son; and the eldest son of a family has been known, on the death of his father, to sell into captivity his sisters, in order to get rid of supporting them. Families among these Kirgis Tartars, at variance with one another, take vengeance by capturing each other's children. The Russians favor this traffic in white slaves to a great extent. The Kirgis, who are so numerous in Western Siberia, have all been brought thither by their own countrymen, and sold to the Russians as slaves.* The Kirgis are also numerous in Bokhara, as slaves, whither they have been carried by their own people. The Kirgis who attend the merchants of Bokhara through the steppes in the north of Tartary, on their trading excursions to Siberia, are so addicted to kidnapping the children of their own countrymen, that when a caravan approaches an inhabited place, "the mothers, with the anxious bustle of cackling hens, drive their children together into a felt tent, and there guard them from their itinerant fellow-countrymen."†

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* Erman, vol. 1, p. 287. † Ibid.

All the Russians they can capture they carry off to the interior of Tartary; and to prevent their running away, they cut a deep flesh wound in the sole of the foot, towards the heel, and insert some horse-hair into it. This, when healed externally, still renders walking painful. Herodotus relates, that the people of the Pontic steppes put out the eyes of their captives.

The trade between Siberia and Bokhara is carried on by caravans of camels. Caravans of from 800 to 2,000 loaded camels make the journey three times a year, but they do not penetrate as far into Siberia as formerly. These caravans also bring with them, for the Siberian market, vast droves of cattle and horses.

Some very ancient usages still prevail in Siberia. Marriages, for example, are celebrated at Tobolsk with all the ceremonies, Christian and pagan, of their earliest forefathers. Marriages are effected entirely by the Svakhi, or match-makers, and the priest. The work of the former is systematically carried on, and is divided into four different solemnities, often separated by considerable intervals. The first is called the *Svidanie*, or first meeting, in which the chosen lady, conducted by the Svakha, is shown to the gentleman from a distance only; the second step is called the *Smotrienie*, or near view; but as yet neither parties are in any way bound; the third step is called the *Rukobitie*, or striking of hands, which is celebrated before witnesses; and the fourth and last of the secular ceremony is *Dievishnik*, or maiden's feast, which closes with the decisive untying of the bride's head-dress, in the presence of the bridegroom, to indicate that she is forever his. At the wedding, in the church, the young couple set each a foot upon a small carpet spread between them, and at the same time their relatives, selected for the purpose, hold crowns of metal over their heads while the priest pronounces the benediction. They then march round the altar, the crowns still being held over their heads. At the house of the newly-married pair they receive kneeling, with holy household images resting on their heads and shoulders, together with a large loaf and a basket of salt, the benediction of their parents, while the bride and her female attendants pronounce aloud the marriage vows.

It is very singular that, at the present day, there exists in Siberia a sect entertaining the views and practices of the ancient Phrygian Attis, or worshipers of Cybele. They have existed in Russia from very ancient times, and the members of the sect are called Skoptsi. They not only abjure all obedience to sexual impulses, but also engage to suppress them totally by mutilation. At the beginning of the present century this equally singular and mischievous doctrine had taken such a hold in the government of Simbirsk, that it was found absolutely necessary to deviate from the general rule of perfect tolerance, and to suppress those tenets by persecution. But the delusion, apparently suppressed, rises into view from time to time in different places; and it is not many years ago that a large society of Skoptsi existed among the soldiers settled in Tobolsk.*

* Erman, vol. i., p. 295.

Whilst waiting at Tobolsk for the Obi to freeze, M. Erman made a series of astronomical observations for the purpose of determining the exact geographical position of that place. In 1761, M. Chappe d'Auteroche was sent to Tobolsk for the purpose of observing the Transit of Venus. M. Bessel had expressed some doubts regarding the accuracy of the latitude and longitude of Tobolsk, as given by Chappe; and as this was an important element in the fixing with certainty the distance of the sun from the earth, M. Erman took particular pains to settle the question.

The first difficulty that presented itself was the entire absence of all records regarding the actual site of M. Chappe's observatory, for it had been long since demolished, and there was no one in Tobolsk who could give any information of it. At last an old Swedish artillery officer, Col. Kremer, 80 years of age, was discovered living in perfect seclusion in Tobolsk. He proved to be, on inquiry, the very person who had superintended, many years before, the taking down of the tottering and dilapidated observatory. He led M. Erman to a spot in the upper part of the town, and pointed out to him, in the corner of an old German burying-ground, the indubitable traces of the foundations of M. Chappe's observatory. On the nights of the 4th, 7th, and 15th of November, he succeeded in taking the necessary observations, from which Bessel afterwards calculated the latitude of Tobolsk, and found it to be 8″.1 less than that found by Chappe.

On the 16th of November the party began to prepare for their trip down the Obi to the Frozen Ocean. They had a formidable undertaking before them, and it was necessary to arm themselves against all the obstructions that might arise from man, weather, or hunger. They were advised by the authorities of Tobolsk to take out new passports from the governor of Tobolsk to all the towns in the region they intended to visit, the reason assigned for this being that the people of those distant regions knew little of "the power which issues from the centre of the empire" at St. Petersburgh, whereas they would respect any thing emanating from Tobolsk. In fact, the influence which the government of St. Petersburgh exerts over Siberia is very inconsiderable. In the northern parts, the people scarcely know that they are the subjects of the Czar. Catherine, it is said, seriously entertained, for a time, the idea of "giving Siberia a constitution like that of the North American states." "To make Siberia a republic," says M. Erman, "little more would be requisite than to add the title to the present state of things."

Having provided themselves with a guide who could speak the Ostyak language, furnished with clothing of furs, and laid in a stock of provisions, they were ready to proceed. Fur clothing, so indispensable in Siberia, is very cheap. An entire suit, answering for both summer and winter, and so well made as to last a man half his lifetime, can be bought for 20 roubles, calling the rouble 3s. 6d. sterling. The dress is of skins, with the fur turned inwards, and the outside covered with some durable cloth. M. Erman also laid in a stock of brandy, wine, and porter; "but we soon learned," says he, "that all these drinks may well be dispensed with on a winter's journey in Si-

beria, and are less conducive to the traveler's comfort than *tea*, which is above all praise." This testimony of the inutility of ardent spirits in cold latitudes was given by M. Erman, a German, twenty-five years ago, and is worthy of note.

M. Erman and party left Tobolsk on the 22d of November, in sledges drawn by horses. They found the country level and gradually sloping towards the north, and covered, particularly on the west bank of the Obi, with dense forests of tall pines. In summer these are subject to conflagrations. Vast tracts of these forests are often consumed by fire accidentally communicated by the hunters. In some places there were found, by M. Erman, thick woods of alders, willows, and poplars. The people of the country between Tobolsk and the mouth of the Obi are the Ostyaks. Their language is quite different from the Russian. The population along the Obi is thin. Small villages are found at considerable intervals, consisting of wooden houses with the windows closed, some with pieces of talc joined together, and others with fish-skins, which are translucent. The houses are kept neat and clean, and the people are honest, industrious, and happy. Their chief employments are hunting and fishing in winter, which lasts nine months, and in the short summer in tilling the soil, which is fertile, and productive of most of the small grains as far north as 60° N. lat. Beyond that there is nothing but perpetual snow and ice. The rivers abound in fish, and the forests in game. Wild fowl are abundant for a considerable distance north of Tobolsk. The banks of the Obi, in many parts, are subject to inundation.

The Ostyaks, of both sexes, are addicted to drunkenness, which extends even to their priests of the Greek Church. The sale of liquor (brandy is the only kind used) is a monopoly in Western Siberia, farmed out by an agent of the government residing at Yekaterinburg.

The people of the Obi have no want of the comforts of life; for besides the fine fish of the river, and the elk, deer, and other game of the forests, there are brought down to them from Tobolsk provisions of all kinds, teas from China, &c. The houses are heated by means of stoves and large fire-places, wood being abundant. Farther north the Ostyaks live in huts, with the floor sunk about a foot below the surface. The huts are divided into apartments by partitions radiating to the centre, where a stove supplies heat to all. Each family is required to pay two sable skins annually as a tribute to the Russian government.

The arms of the Ostyaks are bows and arrows, which they use with surprising force and dexterity. The bows are about six feet long, carrying an arrow four feet long, blunt for small game and sharp-pointed for large.

At Sosnov, in about lat. 64°, M. Erman found the village surrounded with "a superb pine forest." There were also firs and larches 80 feet high, with gigantic trunks and branches only at the summits. The houses were of logs, of a square form, with low doors on the south side. The roof is flat, and covered with earth, and embankments of earth were thrown up against the sides of the house. A

small window on the south side is kept closed with a slab of ice. The inhabitants of this village were clothed in fish-skins instead of furs. Both sexes wore trowsers and vests fitting the body closely. The houses generally are destitute of furniture.

At Shorkalsky, a day's journey north of Sosnov, was found "a very respectable village," with a small wooden church. The citizens were all extremely hospitable, as everywhere else in Siberia. Some of them were wealthy, and had neat houses handsomely furnished with chairs, tables, presses, &c.

The Ostyaks tell the time of night by observing the constellation of the Great Bear, and this with surprising accuracy.

On the 30th of November our travelers arrived at Beresov, a considerable town on the Obi, about a degree and a half south of the Arctic circle: it is near the junction of the Sosva with the Obi. At this place the sun rises on the 30th of November at 9 o'clock and 39 min., and at noon has an elevation of 4° 18′ above the horizon. Most of the light then enjoyed at this place is what a Russian poet calls that of "the half-dark day." The streets are regular, and the houses of wood are carefully built with large timbers. The banks of the Sosva are here about 80 feet high, and covered with a thick forest of lofty trees. Towards the north of the town extends, as far as the eye can reach, an uninterrupted plain of snow and ice; and this, during the spring, is overflowed by the two rivers for a distance of 50 versts. In this place, as at Tobolsk, there are no inns, and, in conformity with the ancient Russian usage, the duty of entertaining M. Erman and his party was not allowed to fall on a single family, but, during a space of five days in the town, he was continually moving, as a guest, from house to house; not alone, however, for his hosts of the previous day attended him, so that at the house of the fifth host the party was very large.

Since entering Siberia, M. Erman had, at Tobolsk and other places, examined the temperature of the earth, by sinking a thermometer between 20 and 30 feet between the surface, by boring. At Beresov he sunk a thermometer 23 feet, where it was suffered to remain three hours. On drawing it up it was found to stand + 1° 60 R.; while in the open air it stood at—8° R. Nearly the same result had been obtained at Tobolsk, where the strata were also the same as Beresov. The mean summer at Beresov is as follows:

June,	+ 14° 8 R.
July,	+ 13° 4
August,	+ 15° 8

The market of Beresov is constantly supplied with reindeer, which are kept in large herds by the neighboring people. The reindeer venison takes the place of beef. Among the fur animals that supply the trade of Beresov are the polar fox, of which there are seven varieties; the common fox, and the beaver, which is found in the greatest abundance in the latitude of Beresov. It is not the fur of these animals which the hunters prize the most, but the precious cas-

toreum, or beaver-stone, to which the Siberians ascribe unparalleled medical virtues. A pound of it is worth 500 roubles, or $375.

Of the feathered game in the latitude of Beresov (63° N.) are the pigeon-grouse and heath-fowl in winter, and wild ducks, in immense multitudes, in summer.

The honesty of the Ostyaks is extraordinary. Theft is not known among them. An engagement made with one of them is never broken, if confirmed with certain usual ceremonies. The bear is held by them to be omniscient, and it is appealed to as a witness by the Ostyaks. When a witness is to be sworn in a court of justice, the head of a bear is brought in. In swearing, the witness makes the gesture of eating, and calls upon the bear to devour him, in like manner, if he does not tell the truth. A promise made by them operates even after the death of him making it, the son voluntarily paying his father's debts. Frequently, families have discharged the engagements of their deceased relatives, on the production of incontestible proofs, after several generations.

M. Erman found at Beresov a number of exiles whose wives had followed them into Siberia. Such examples of connubial fidelity are far from being unusual in the history of Siberian exile. The great majority of Russian exiles are not sentenced to labor in Siberia, but only to foreign residence, and they are supported by the government, if political offenders only; if they belong to the laboring class they support themselves.

M. Erman left Beresov on the 3d of December, in reindeer sledges. On the 5th, he arrived at Kachegatsk, a hamlet in latitude 65° 15′ N., and only 84 miles from the Arctic circle. Here he found the dip of the needle to be 75° 25′. M. Erman's accounts of the vegetable productions of this high latitude differ materially from those of the usual sketches of Northern Siberia. In the latitude of 65°, he found "thick, tall trees" surrounding him on his journey. He found the larch, pine, and birch, growing abundantly, and in no wise inferior in appearance to the trees of the same kind growing in the vicinty of Tobolsk. Speaking of a trading station about 20 versts E. N. E. of Kachegatsk, he says: "The fertility of the banks (of the river) at this picturesque spot is quite famous; for not only are they adorned with forest trees, which cover the low plains on the western side of the river, and here retain their full vigor, but garden vegetables have also been reared, such as turnips, of immense size. Blackberries, also, and roses, grow luxuriantly in the woods."* The temperature of the air at this place, at the time, was 15° R., or 13¾° F. At Beresov, two days, it was 21° R., or 15¼° F. On the 6th of December, M. Erman arrived at Mushi, on the Obi, where he found the Ostyaks living in tents of reindeer skins. The day was here only three hours long: the sun, at noon, attained an elevation of only 1° 40′ above the horizon. Here he observed tattooing on the hands of the women, and trinkets in the ears of the men. Tattooing, however, is very rare in Siberia.

* Erman, vol. ii., p. 21

On the 8th December, M. Erman arrived at Obdorsk, a small town almost on the Arctic circle. Its houses are of logs, and it has a small wooden church. The site is hilly, and to the west, in the distance, are seen the Ural Mountains, of a dark blue appearance, and covered with snow. Here they found the earth abounding in cracks, of a great depth, caused by the intense cold. The Russian flag was here, for the first time since leaving Tobolsk, seen flying on the roof of a house, occupied by some seamen who were wintering there. They belonged to the party of Ivanof, who had been engaged for seven years in a detailed survey of the coast of the Arctic Ocean, from the Petchora to the mouth of the Obi. There is no tide perceptible at Obdorsk, except when a gale is blowing from the north. On the coast of the Arctic Ocean, near the Obi, the tides are regular, and rise not above two feet.

Obdorsk is the seat of a great annual fair, held for the accommodation of the north of Siberia. This fair is frequented by all the nomadic tribes who wander over a region extending through 51 degrees of longitude, or from Archangel to the lower Yenisei. The articles brought hither by Russian merchants are exchanged for furs and *fossil ivory*, or tusks of the mammoth, for exportation. Down and geese feathers are also carried away from this fair by the Russians. The Samoyedes who dwell in the extreme north of Siberia, between the Obi and the Yenisei, bring to the fair the skins of the polar bear.

The question respecting the origin of the Hungarians, which has been so long agitated by the ethnologists and philologists of Europe, and which is made to turn on the affinity of the Magyar language with that of other nations, is discussed at some length by M. Erman, who decides that the Ostyaks of Siberia were the progenitors of the Hungarians. He discovers between the Magyar and Ostyak languages "a close resemblance in 81 of the most essential roots, as the result of a supplementary examination, 234 pairs of words." He finds a striking agreement in the characteristic terminations of verbs and noun substantives; also numerous words of the same form in both languages, and of nearly the same signification.* He thinks that "in this northern part of Siberia there is absolutely nothing, at the present day, calculated to countenance the belief, that the inhabitants, driven by some convulsion, have come hither from the countries in the south." He declares that "there is nothing which leads to the dogmatic assumption, that neither language, nor anything else characteristic of a people, can have developed itself independently in the northern regions of the earth."

The Ostyaks and Samoyedes are pagans. Their chief deity is called *Toruiv* by the former, and *Num* by the latter. Their worship is wild and full of strange ceremonies. They believe in divination, and that their priests are possessed of superhuman powers. They dance and scream around their idols.

The fish of the great Obi River are chiefly the sturgeon, different

* Erman, vol. ii., p. 37–8–9.

kinds of salmon, pike, perch, bleak, mullet, turbot, herring, and the dolphin. The dolphin of the Obi is sometimes 28 feet long. It is very destructive to the other fish. The inhabitants of these regions are perfect Ichthyophagi. M. Erman estimates, that of the 60,000 aboriginal inhabitants of the government of Tobolsk, each one consumes at least one pound of fish a day, and his dog two pounds; and that of the 480,000 Russians there, each one consumes at least one-third of a pound per day, from which he deduces an annual consumption of 113,000,000 pounds, or 26,000,000 of single fish.

The earth is perpetually frozen at Obdorsk to a great depth—at least 17 feet. On sinking a thermometer to the depth of 21 feet, it was found to stand at 1° 67 R., and in the open air at 25° R.

On the 11th December they set out for the mountains, which they reached on the 13th, and found them to be formed of step-like strata. The outer ledge of this Obdorsk range was found to be large independent masses of syenitic greenstone, thus agreeing with the Ural as seen at Yekaterinberg. Towards the middle of the mountains this was succeeded by hornblende slate, containing an abundance of feldspar, in which very fine crystals of both the constitutent minerals formed parallel and simple layers, while brown garnets were irregularly scattered through the slate. On the highest point of the range, and on the sides, were seen a yellowish and finely laminated gneiss exclusively. The tops of the mountains were quite naked, there being no snow on account of the strong wind and the extreme dryness of the upper strata of the atmosphere in this latitude. The temperature of the atmosphere was 28° R. As M. Erman had the misfortune to break his barometer the day before, he was compelled to heat water in his kettle, to observe the boiling point, which indicated an elevation of 1,660 feet. This was a low pass over the mountains. In other places the range is known to rise 4,000 feet at least. From the vertical angle observed at Obdorsk, and the distance of 75.5 versts derived from azimuth angles, an elevation of 4,813 feet was derived for the highest summit visible.

On the journey down the mountain to Obdorsk, M. Erman had an opportunity of observing some of the strange customs of the Samoyedes. A young reindeer being killed, the men, women and children began to eat it voraciously, while yet raw, warm, and reeking with blood. One old man sucked the brain out of the skull, as one would suck an egg, smacking his lips with intense satisfaction. When the company had finished gnawing and sucking the bones, their faces were covered with blood. The eating of raw fish is common.

The Samoyedes seen by M. Erman at Obdorsk, were all from the shores of the Polar Ocean. Among other articles which they brought with them were *mammoths' teeth*, which are frequently thrown up by the waves of that ocean wherever they beat upon slopes of alluvial land. Large quantities of the bones of various antediluvian pachyderms are constantly being thrown up on the shores of the Polar Ocean. The native Samoyedes believe that the mammoth still haunts their shores. Formations of earth and peat, filled with the fossil remains of the

mammoth, are a very common phenomenon on the shores of the Polar Sea, beneath which lie sands rich in gold dust.

On the fifteenth of December, M. Erman left Obdorsk for Tobolsk, where he arrived on the twenty-seventh. On the fourth of January, he left Tobolsk to continue his journey eastward. From Tobolsk he proceeded up the Irtuish to Tara, and thence due east to Tomsk, and from thence to Krosnoyarsk, on the Yenisei. There was seen nothing remarkable or strikingly different in the country since leaving Tobolsk, from what had been observed in the country in the vicinity of that city. All the towns passed through were small, and the country generally level, or slightly undulating—the streams all flowing towards the north. Just before arriving at Krosnoyarsk, M. Erman crossed the mountain of Kemchug, a branch of the Little Altai. He did not ascertain the elevation, and he barely mentions crossing the mountain. The road in many places lay through dense forests of birch, poplar, pine, fir and larch.

The city of Tomsk, of which M. Erman gives but little account, is in lat. 56°, and has from 8,000 to 10,000 inhabitants. Here are work-houses for exiles, coarse cloth, leather, and soap manufactories, barracks, public magazines, military and other hospitals; an orphan asylum, dispensary, &c. There are many handsome houses in the city, but it is irregularly built, except the part overlooking the river Tom. Its principal buildings are a church, a cathedral, the tribunals, treasury, (containing the tribute of furs,) and two convents. The inhabitants carry on a brisk trade with the Calmucks and Ostyaks in cattle, furs, &c., and the town is an emporium for distilled spirits and Chinese goods. It was founded in 1604. It has a military college, with 400 students, in which are taught the mathematics, drawing, fortification, and oriental languages. Here are to be seen Kirgis and Calmuck slaves, sold by their parents for liquor and tobacco.

The Irtuish is navigable for steamboats as far up as the Chinese frontiers, though such a thing as a steamboat is quite unknown there. The scenery along the river is truly beautiful.

Krosnoyarsk is in lat. 56° 1′ N., and long. 92° E., and has a population of 4,000. The plain on which it stands is of great beauty and fertility. Its chief buildings are several churches, a stone edifice for the government offices, and a large factory devoted to several branches of industry, especially coach-building, and the manufacture of Russian leather. The surrounding country produces grain, cattle, horses, &c. In Southern Siberia salt lakes abound. In the government of Yeniseisk there are two which deposit salt naturally, and three from which it is obtained by boiling.

The Yenisei River is about 2,600 miles long. It runs through a mountainous country as far as Yeniseisk, where it is a mile in width. Its banks are high and precipitous. It is frozen over a great part of the year, like all the rivers of the country.

M. Erman resumed his journey eastward from Krosnoyarsk on the thirty-first of January, and traveled over a hilly country. The villages he passed through were occupied almost exclusively by convicts. The most considerable of these villages is Telma, of 2,000 inhabi-

tants, all convicts, of whom 800 were employed in manufactures. From Telma to Irkutsk, "the road lies through a splendid forest of pines, firs, and larches."

Irkutsk, the capital of Eastern Russia, stands at the confluence of the Angara and Irkut rivers, about thirty miles from Lake Baikol, in lat. 52° 16′ N., and long. 104° 19′ E. It is situated on a wide plain 1,240 feet above the level of the sea. The mean temperature of its climate is 0° 3 R., or rather below the freezing point. The Angara, which is 1,000 feet broad, runs through the middle of the city. It is fortified, and has a citadel. Most of the houses are of wood. The streets are broad, but unpaved. There are thirty-three churches, twelve of stone; an exchange also of stone, and a bazaar. The Baikol admiralty house and building docks on the Angara, and the medical college, gymnasium, and *comptoix* of the Russo-American company, are worthy of a European city. Its other public buildings are the government house, theatre, several convents and hospitals, and a prison. It is the seat of an archbishop and of a Russian governor, whose authority extends over the immense provinces of Irkutsk, Yakutsk, Okhotsk, Kamschatka, and Russian-America, including Bodega. It has numerous educational establishments, including besides the gymnasium with its library of 5,000 volumes, an Episcopal seminary, high-school of navigation, with classes for instruction in Tartar, Chinese and Japanese languages; normal, secondary, Lancasterian and other schools, and a cabinet of mineralogy. It has an imperial factory for woolen cloth to supply the army of Siberia, and also various other manufactories. It imports all kinds of goods from China, and holds its annual fair in June. Its annual commerce is estimated at 4,000,000 of roubles.

Lake Baikol is nearly 400 miles long, and from fifty to seventy miles wide. It is, therefore, about twice as large as Lake Erie. It is of very unequal depth, and receives several large rivers. The Angara is its outlet, conducting its waters into the great Yenisei, and thence into the Polar Ocean. The fisheries of this lake are very valuable. It furnishes vast numbers of seals—the skins of which are sold to the Chinese. The most singular fish belonging to the Baikol is called by the Siberians *golomyuka*, (Collyonimus Baicolensis.) It is from four to six inches in length, and so very fat that it melts before the fire like butter. It is never taken alive, but is cast upon the shores by storms, where it is found dead in immense quantities. It yields a valuable oil, which is sold to the Chinese. Lake Baikol is frozen over from November to May. Its size entitles it to the name of sea. The Russian government has a fleet upon it. The navigation is sometimes dangerous from the violence of the winds.

From Irkutsk M. Erman continued his journey, crossing the lake to Selinginsk, near the Chinese frontier. On his way, he met Chinese merchants with their camels, and the town itself was full of them. The country, as he proceeded towards the Chinese frontier, rises gradually for the first 140 miles, to the height of 975 feet above the city of Irkutsk, which itself, according to M. Erman's barometrical measurements, has an elevation of 1,237 feet above the sea. For the next 170 miles southwards, as far as Urga, in Mongolia, the ascent is still

more rapid, till at Urga we have an elevation of 3,187. The country then continues to be level, until we strike the border of the parched desert of Gobi, a distance of 390 miles.

Lake Baikol has an elevation of 1,345. The main road from Kiachta to Irkutsk, along which Chinese and other merchants transport their goods, passes over a ridge, called the Long Ridge, at a point having an elevation of 5,170 feet above the ocean. This point is between Sniezhninsk and Slindinsk. Over these mountains the road reaches the tops of the summits by zig-zags, protected by wooden palisades, constructed with great labor.

The vegetation in the district of country around Lake Baikol is varied and luxuriant. Nerchinsk, a little to the south of Irkutsk, but much more elevated, is celebrated for its floral treasures. Spiræas, lilies, rhododendrons, and many varieties of the rhubarb and rumex, flourish there. M. Turchaninov enumerates 1,000 phanerogamous plants in the neighborhood. In spite of the climate, says M. Erman, the flora of Irkutsk is richer than that of Berlin, exhibiting the plants of warm countries intermixed with those of the Arctic regions. Here the wild peach, the Prunus Armeniaca, thrives by the side of the Siberian stone-pine and the dwarf birch of the polar circle. The same is true of the fauna of the Transbaikalian districts; for here around lake Baikol, we see the Siberian with his reindeer passing the Mongolian with his camels; and the tigers of China are found in the same forests with the hibernating bear of the Siberian snows.*

M. Erman, as he traveled towards the Chinese frontier, met immense trains of one-horse sledges loaded with tea, tied up in hides, from China. He had frequently met these tea-sledges, between Tobolsk and Irkutsk; but here they became much more numerous. From 50 to 100 sledges were in a train, each with a bundle of hay fastened behind to make the next horse follow. They generally go at a brisk trot, and one driver serves for several sledges. The roads are in this part of the empire regularly provided with mile stones, or rather verst-posts, showing the distance from St. Petersburgh and Moscow. Irkutsk is about 5,963 versts from St. Petersburgh, the people being nearly as far from the capital as from the earth's centre. The express mail system is common in Russia and Siberia. Sledges transport packages to all parts of the empire. A package weighing one pound can be sent from Kamschatka to St. Petersburgh for one rouble, or 75 cents.† This is a little in advance of our American expresses.

Passing through Selenginsk, on the 15th of February, the headquarters of a body of border artillery, M. Erman arrived the same day at Kiakhta, at the junction of the Selenga and Kiakhta rivers, and directly on the boundary line between the Russian and Chinese empires. It is the centre of the trade and political intercourse between the two empires. It is 2,220 feet above the sea; 180 miles from Irkutsk; in lat. 50° 21′ N., and long. 106° 28′ E. The population is about 5,000. The boundary line runs through the lower town,

* Erman, vol. ii., p. 151. † Ib., p. 155.

a wooden barricade forming the divisions, through which is a wide portal displaying the Russian eagle above it, along with the cipher of Nicholas the I., by whom it was erected. "The change, upon passing through this gate, dividing the two greatest empires on the globe, seemed like a dream," says M. Erman, "or the effect of magic; a contrast so startling could hardly be experienced at any spot upon the earth. The unvaried sober hues of the Russian side were succeeded all at once by an exhibition of gaudy finery, more fantastic and extravagant than was ever seen at any Christmas wake or parish village festival in Germany." The Chinese side of the boundary is a village of 1,500 inhabitants, called Mia-mia-tchin, or the place of trade. All the Chinese are obliged to cross the boundary at sunset, and spend the night on their side of the line, at the sound of gongs. No women are allowed to reside in Mia-mia-tchin, and all Russians and foreigners are sent across the boundary into Siberia at sunset. The Russians exchange furs, sheep, and lamb-skins, Russian and Silesian broad-cloths, Russian and Morocco leather, coarse linens, cattle, and especially bullion, for tea, raw and manufactured silks, nankeens, porcelain, sugar candy, rhubarb, tobacco, musk, &c. Brick tea is the only money current at Mia-mia-tchin. Brick tea is a mixture of the spoiled leaves and stalks of the tea plant with the leaves of some wild plants and bullock's blood, dried in an oven. It is pressed into the form of a brick, each cake weighing from three to three and a half pounds. The Manchoos never use this as a drink; but to the wandering Mongolians, the Buraets and Calmucks, and to the Russian peasants and Siberian Tartars, it is indispensable. About 300,000 lbs. are annually brought to Kiakhta.

At Kiakhta M. Erman continued his magnetic observations, and discovered that in the valley of the Salenga he had crossed a second time the line of no declination. As mentioned in the first part of this paper, he had come upon this line in Russia, west of Nijnei Novgorod, at a place called Sudogda, where the direction of the line was from N. W. to S. E.; while here in Siberia, near Lake Baikol, the direction was from S. W. to N. E.; and the observations which he had made between these places, when taken together, he found to prove, that the two portions thus differing in direction, belong to one and the same line. This refuted the hypothesis of two lines of declination in the Asiatic continent, advocated once by some. The magnetic force at Kiakhta he found to be equal to that under the 82d parallel of latitude in the meridian of Berlin.

On M. Erman's return to Irkutsk, from Kiakhta, he visited the Khamba Lama, or chief of the Lamas or Mongol priests, whose religion is nearly the same as that of the Buddhists of India. We must pass over his visit to one of their temples, which, indeed, have been often described. The geological features of the country around Lake Baikol engaged much of his attention. The whole region he found to be volcanic. The shores exhibit proofs of great violence, for strata that evidently had once a horizontal position, now stand vertically and like parallel walls. Sometimes they are split above, and then, a crag, extending from the interior region, towers high over the coast. The shores in many

places are very high and perpendicular, and the water has been found 700 feet deep only 900 feet from the shore. M. Erman thinks that one and the same force raised the strata of the bank, and caused the subsidence of the ground on the site of Lake Baikol. Volcanic rocks abound. He infers, from all his observations, that the bed of Lake Baikol is a volcanic fissure or chasm. The present continuance of volcanic agencies is indicated by the great quantity of carbonic acid disengaged in the valley of the Uda, in the limits of the granite and the basaltic lavas. There are hot springs in the neighborhood, and on the borders of the lake.

Of the mineral products of this portion of Siberia lead and iron are the chief. At Nerchinsk are lead mines, yielding 3,000,000 lbs. annually; the mines of Nerchinsk are also rich in zinc, tin, iron, gold and silver. They yield about 15,600 lbs. avoirdupois of silver, annually. Copper is almost totally wanting in this part of Siberia. There are also very rich mines producing green, yellow, and blue emeralds and topazes.

On the 19th of March, M. Erman left Irkutsk for Okhotsk and Kamschatka, by the way of the Lena river as far as Yakutsk, observing the magnetic dip and intensity every morning, and the sun's altitude for the latitude. The valley of the Lena is generally fertile, covered with forests of larches, furs, pines, and Siberian cedars. It is in many places hemmed in by perpendicular rocks of red sandstone. Goitre is a very common disease in the valley of the upper Lena. The population of the valley of the Lena is very thin, it being collected into small villages or stations. M. Erman traveled sometimes 40 versts without seeing a single dwelling. As one descends the river the country becomes more barren and dreary. Long before reaching Yakutsk the cliffs along the river are of limestone. The general course of the Lena from its source in the lofty mountains near Lake Baikol, for the first 350 miles, is N. W.; it then turns and runs in an E. N. E. direction 1,000 miles to Yakutsk, the metropolis of East Siberia, where it is a wide and noble river. From this city to its mouth its course is about N. It forms, on its entrance into the Arctic Ocean, a large delta. The distance from Yakutsk to the mouth is about 700 miles; and the whole length of the river is upwards of 2,100 miles. The principal tributaries are the Kirenga, Vitirn, and Olekma, above Yakutsk; and the Aldan below. The Lena is a sluggish stream, and full of islands. It is perfectly navigable. The forests on its banks are chiefly of spruce and yellow pine, both of large growth. Below Yakutsk the face of the country changes, and the river rolls through vast and almost uninhabited plains covered with snow and ice, which never wholly melt, and beneath which have been found the carcasses of the mammoth, the rhinoceros, and other fossil animals.*

On the 8th of April M. Erman saw the towers of Yakutsk, at a distance of 10 versts, after a journey of 20 days from Irkutsk, most of which he had made on the ice of the river. It is about 1,150 miles

* Dobell's Siberia, vol. ii., pp. 62–82. Lyell's Geology, vol. i., pp. 140–144

N. E. of Irkutsk, in lat. 62° 1′, and long. 147° 44′ E. It is situated on a barren flat. It has five churches, a convent, and a fortress. It is the centre of the interior trade of East Siberia. All the costly furs, walrus' teeth, and fossil remains, are brought hither for sale from Anabar, Behring's Straits, the Polar Ocean, Kamschatka, and Okhotsk; and all kinds of European and Chinese goods are brought down the Lena from Irkutsk. It has its annual fair. The inhabitants are hospitable and gay. The climate is very extraordinary. Every winter, between December and February, the temperature falls to 40° R., or 56° below the 0 of Fahrenheit. In 1829, on the 25th of January, it was 46° R. Mercury is a solid body, at Yakutsk, for one-sixth of the year. The mean temperature of summer is about 65° F. There are at Yakutsk 128 days in the year without frost. The fields thaw to the depth of three feet, and wheat and rye are raised in the neighboring towns. It is ascertained, by actual excavations, that the earth is perpetually frozen at Yakutsk to the depth of 50 feet. M. Erman descended to that depth in a well at Yakutsk, and found that the mercury stood at 6° R., or 4° below the freezing point. He thence inferred, that the earth there must be frozen to the depth of 630 feet; since, allowing the increase in temperature downwards towards the centre of the earth to be the same there as elsewhere, water could not exist in a liquid state short of that depth.

In the gardens of Yakutsk are cultivated potatoes, cabbages, turnips, and radishes.

The power of the human body to resist extreme cold is amply shown by the statements of all travelers who have visited the highest latitudes. Men dressed in furs sleep all night in an open sledge with the mercury frozen by their side. "Even with the air at 40° R.," says M. Erman, "nothing more is necessary for comfort than good fur garments." It is a wonderful fact, that the human lungs can constantly breathe air which at the same time freezes mercury solid like lead!

The most remarkable phenomena witnessed in Siberia are those revealed by the geology of that region of the globe. The whole northern half of that country, from the mountain ranges down to the shores of the Polar Ocean, consist of strata of loam, fine sand and magnetic sand to the depth of at least 100 feet. The strata are alluvial, and abound in vegetable remains and the bones of antediluvial quadrupeds —ivory tusks, the entire skeletons of elephants, rhinoceroses, bisons, and other extinct species, filling mysteriously the strata. In the lower valley of the Lena, especially, are found the teeth and bones of mammoths, rhinoceroses, and other quadupeds, and even whole carcasses.*

As we approach nearer to the shores of the Polar Ocean, the deposits of wood below the earth, and also the deposit of bones which accompanies the wood, increase in extent and frequency. In some parts the inhabitants rely upon these deposits of fossil wood for fuel. They obtain it on the shores of lakes which are continually throwing up trunks of trees from the bottom. The search for ivory, too, grows

* Erman, vol. ii., p. 285.

continually more certain and productive, from the banks of the lakes in the interior, to the hills along the coast of the icy ocean.

In the islands along the coast these phenomena assume the most striking aspect. Thus, in New Siberia, an island about 150 miles from the coast, are hills from 250 to 300 feet high, formed of drift wood, which grew anterior to the history of our globe in its present state. On other hills of the same island, and on the isle of Kotelnoi, farther west, are heaped up to an equal height skeletons of pachyderms, bisons, &c., which are cemented together by frozen sand, as well as by strata and veins of ice. The trees and skeletons of these hills are thrown together in the wildest confusion, as if by the violence of an ocean of rushing waters. The shores of the Arctic probably once extended at least 700 miles farther south than now.

M. Erman left Yakutsk for Okhotsk, on the sea of that name, on the 23d of April. His route was nearly east, crossing the Aldan, a branch of the Lena, at about the middle of this his last route in Siberia. He found the country mountainous and very thinly populated. There is not a single town on the whole route between Yakutsk and Okhotsk, a distance of 424 miles. The eastern half of the route is extremely mountainous. The mountain range passed over between Yakutsk and Okhotsk is a continuation of the Great Altoi, a name not mentioned by M. Erman. He calls them the Aldan Mountains, from the river Aldan which rises in them. He passed over them in about lat. 60°, where he found them to be 4,200 feet in height, and covered with larches. The extensive view towards the east from this height showed the mountains to lie in three parallel ranges, running N. N. E.

M. Erman arrived at Okhotsk on the 19th of May. It is situated at the mouth of the little river Kukhtin, emptying into the sea of Okhotsk. It contains a small church, a wooden observatory, ten large buildings near the mouth of the river, and a few clusters of log houses. This is the substance of M. Erman's description of Okhotsk; but we strongly suspect that the original has been immensely curtailed by the translator, in order to produce an English edition of a size suited to the wishes of the publishers. We cannot otherwise account for so brief a description of places that are found on all maps. In the preface to the work, written certainly not by M. Erman, it is frankly confessed, that the first portion of the work—the journey across Europe from Berlin to Tobolsk—has been abridged. We are also told that the title of the work has been changed, from "Travels Round the Earth," to its present one. This became necessary to suit the book-making rules of publishers, who are in the habit of taking all kinds of liberties with authors, in order to make a saleable book of a given size. Thus have they hacked and hewed both ends of M. Erman's great and valuable work, cutting off all beyond Okhotsk, and miserably curtailing all west of Tobolsk.

We are furthermore told, in this preface, that the work is abruptly stopped at Okhotsk, because M. Erman has as yet published his travels no farther. But this cannot be; for Mr. McCulloch, in his somewhat extended description of Kamschatka, whither M. Erman

continued his travels, quotes the latter author extensively, giving volume and page, and this he does in 1844, six years before this garbled translation appeared.

M. Erman's original work, which was published entire in two volumes, in 1833–38, was truly what its title declared it to be—*Reise um die Erde durch Nordasien und die beiden Oceane*—for his journey extended from Okhotsk to Kamschatka, whence he sailed over to the Russian colonies in America; and by way of California, Otaheite, Cape Horn, and Rio Janeiro, he returned to St. Petersburgh and Berlin, having thus performed a journey entirely around the globe. The account of this journey was, in fact, published in two distinct works, the one whose title is given above, and another entirely of a scientific character, in two volumes, with an atlas. This appeared in 1835–41.

M. Erman is at present, or was in 1847, professor of mathematics in the French Gymnasium, and "extraordinary" professor of philosophy in the University of Berlin.

ART. IV.—THE ISTHMUS OF TEHUANTEPEC.*

The project of constructing a rail-road across the Isthmus of Tehuantepec is undoubtedly the most important one that has ever been contemplated in the United States. The Tehuantepec Rail-road, too, would accomplish all the objects that that of Mr. Whitney could; and, besides, its construction would not cost the hundredth part of that of the great Pacific road.

It is truly gratifying to know, that the difficulties that have been presented to the prosecution of the labors of the New-Orleans Tehuantepec Rail-road Company, by the faithlessness of the present Mexican government, are likely to be soon dissipated, so that the rights of the company will be fully recognized and secured. Nothing but an entire disregard of the rights of our citizens by our own government can now prevent the commencement and completion of this great work. The government cannot, honorably, do less than make it an *ultimatum* with the Mexican government, to recognize fully the Garay grant, and its lawful transfer to the present company.

We propose, in this paper, to give our readers the results of the late survey of the Isthmus of Tehuantepec, made by the Scientific Commission under the direction of the chief engineer, Major J. G. Barnard.

The Isthmus of Tehuantepec, from the mouth of the Coatzacoalcos River (lat. 18° 8′ 20″ N., and long. 94° 32′ 50″ W.) across to the port of *La Ventosa*, on the Pacific, in lat. 16° 11′ 45″ N., and long. 95° 15′ 40″ W., is 143½ miles wide, in a direct line. It consists of three distinct divisions, topographically considered; namely, the portion on the north side, extending from the Gulf of Mexico to the

* THE ISTHMUS OF TEHUANTEPEC: Being the results of a survey for a Rail-road to connect the Atlantic and Pacific Oceans, made under the direction of Maj. J. G. Barnard. By J. J. Williams, Asst. U. S. Engineer, 1852. New-York, Appleton & Co.

foot of the mountains in the middle of the isthmus; second, the mountain region in the middle; and third, the level plains extending from the base of the mountains, on the south, to the Pacific.

The northern portion, called the *Atlantic Plains*, is made up of extensive alluvial basins, of exceeding richness and fertility, some 40 or 50 miles broad. It is watered by the Coatzacoalcos and its tributaries. The southern portion, called the *Pacific Plains*, is a vast inclined plain about twenty miles broad, and elevated about 250 feet above the Pacific. Its slope from the foot of the mountains is from 10 to 15 feet per mile. These two portions of the isthmus present no difficulties; it is the central portion only that affords obstacles to a rail-road. This central portion is about forty miles broad. It is traversed, from east to west, by the Cordilleras Mountains, the continuity of which is nearly broken at the exact point where the isthmus is the narrowest. Elevated table-lands occupy most of this line of broken continuity, watered by the tributaries of the Coatzacoalcos, running through rich alluvial bottoms. These tributaries, however, are mere mountain torrents. Spurs of the Cordilleras extend into these high table-lands, and present the chief difficulty to be encountered. But fortunately there are natural passages through these spurs which would have offered almost insuperable obstacles to the construction of a rail-road, formed by the rivers Malatengo, Almoloya and Chichihua, tributaries of the Coatzacoalcos.

The streams on the Pacific coast are all small, but afford any amount of water-power for sawing lumber, or for other manufacturing purposes. The principal one is the Tehuantepec, which empties into the Bay of La Ventosa. It is not navigable.

On the north side of the isthmus, the chief river is the Coatzacoalcos, which extends three-fourths of the distance across the isthmus. The village of Minatitlan, 20 miles from its mouth, is the present head of ship-navigation, but ships may ascend ten miles farther. Light draft steamers, of two feet, may ascend, at all seasons, to the confluence of the Jaltepec, and above a distance of 125 miles from the Gulf of Mexico, by the windings of the river. The banks of the river, below Minatitlan, are very low, and frequently flooded. The mouth of the Coatzacoalcos is 115 miles west of the Tobasco River, and about 110 miles from Vera Cruz. Its width is about 1,500 feet. Vessels drawing 12½ feet of water can enter it, at all seasons, by two channels. Within the bar the water is 40 feet deep, which depth is maintained for a considerable distance. The mouth of this river offers very superior advantages as a safe and commodious harbor for ships. Cortes, in his official dispatches to the Emperor Charles V., speaks of the importance of this river as furnishing the best harbor to be found on the Gulf coast of Mexico; and it is an important fact, worthy of remark, that the soundings, as made by Cortes in 1520, more than three hundred years ago, give about the same depth of water on the bar as found now; thus showing the important fact, that the depth of water on the bar is not subject to variations. Cortes ascended this river twelve leagues.

The most considerable tributary of the Coatzacoalcos is the Uspa-

napa, which is in some respects superior to the former for the purposes of navigation, it having a sufficient depth of water to float large vessels to a greater distance from the gulf, and also being less tortuous. It has not yet been fully explored; but the Indians assert that it has been ascended in canoes for twenty-five days. The mountains in which it takes its rise are said to abound in mines of gold and silver. This river enters the Coatzacoalcos a few miles below Minatitlan.

The proposed southern or Pacific terminus of the rail-road across the isthmus, is the Bay of *La Ventosa*. The immense basin of La Ventosa presents a safe and commodious harbor to vessels of all sizes. The configuration of the bay allows vessels to have ingress and egress irrespective of the quarter from which the wind blows. Throughout its great extent, and on entering it from the sea, no shoals are to be met with. Everywhere in it a good anchorage is to be found. The bottom is of compact sand, and a great portion of it is mixed with clay. We gather these facts from the report of Mr. P. E. Trastour, who made a minute survey of the bay to the Tehuantepec Company. Mr. Trastour states, that the harbor of "La Ventosa is much safer than the harbor of Vera Cruz."

Let us now examine the work to be done in constructing the rail-road, fixing the northern terminus at Minatitlan, and the southern at La Ventosa.

From the actual surveys, as furnished by the engineering reports, it appears that the maximum grade on the most difficult part of the line, that is, from the Jaltepec River to the Pacific Plains, will not exceed sixty feet to the mile. This compares favorably with our roads in the United States. The maximum grade per mile of the Baltimore and Ohio Rail-road is 116 feet per mile; that of the Baltimore and Susquehanna, 90 feet; that of the Western Rail-road, 84 feet; and that of the New-York and Erie, 60; so that the practicability of the road, by the route surveyed, is put beyond a doubt. But all the engineers agree that there are other and better routes still, which they would have been able to point out, if the Mexican government had not suspended their labors. The route, as now surveyed from Minatitlan to La Ventosa, is 143½ miles long; but it is quite probable that this distance can be diminished some sixteen or eighteen miles.

The excavations will be made chiefly in common earth, sand, gravel, clay, and loose and solid rock. A short tunnel of 160 rods is recommended in one part of the route; or rather, we should say, four or five short tunnels, amounting in all to about 160 rods, is the tunneling recommended. This tunneling will be easy, because the work can be carried on at ten different points simultaneously, and without the necessity of raising any of the material. The Baltimore and Ohio Rail-road has two miles of tunnel; and a tunnel four miles long is now being excavated through the Hoosack Mountain, on the Western Rail-road.

As to the materials for constructing the road, these are most abundant, close at hand, and of the finest quality. The whole route

affords sandstone, granite, syenite, limestone and marble, in any quantity. There are entire mountains of limestone and marble. Sand is abundant, and also clay for making bricks. Timber of the finest quality is found convenient on the whole line of the route.

The price of native labor on the isthmus is about one-third of that of the United States; and there can be no doubt, that the importation of the more expensive foreign labor could be entirely dispensed with.

We have stated above, that light-draft steamers can ascend the Coatzacoalcos River to the Jaltepec, a distance of 125 miles from the gulf—making the northern terminus of the road at the Jaltepec River, instead of at Minatitlan. The cost of the entire rail-road and fixtures would be, as estimated by the engineers, as follows:—

Cost of road from Jaltepec to La Ventosa.

Opening auxiliary road necessary for the operations of building the road	$ 131,000 00
Clearing, grubbing, graduation, masonry and bridging	4,112,657 99
Superstructure, including six miles for stations and side tracks,	785,882 79
Engine, cars, &c	251,625 00
Station buildings	140,000 00
Three light-draft steamers	75,000 00
Six barges	18,000 00
Engineering and contingencies, 8 per cent	440,000 00
Total cost of road	$5,954,165 78

Such is the cost of the road from the head of light-draft steamboat navigation to the Pacific. If, however, we place the northern terminus at Minatitlan, the head of ship navigation, the total cost of the road, including all fixtures and contingencies, is estimated at $7,847,896 17. In this latter case, the light-draft steamers are dispensed with, but the road is much longer.

Two other routes have been proposed—one leaving Minatitlan to the east, and proceeding directly to La Barilla, on the Gulf of Mexico. This, it is thought, would shorten the road twenty miles. This route has not been surveyed; and, besides crossing the Sierra Nueva River, it would require the construction of a safe post at La Barilla. The other route proposed is to leave the Coatzacoalcos River and Minatitlan far to the west, and crossing the Uspanapa, make the northern terminus at Paso Nueva, on the Coatzacoalcos, below Minatitlan. It is thought that, perhaps, the presence of coal, iron, silver, &c., on this route, would justify its adoption, or at least, the expense of surveying the route, before finally locating the track.

Different routes, too, through the mountains and passes are proposed; and it is highly probable that much expense and distance can yet be saved by careful surveys. All these different routes would have been carefully examined before this time, but for the edict of the Mexican authorities forbidding the survey. This is the only reason why but one route has, as yet, been surveyed.

With regard to the expense of constructing the road, as given above, it is necessary to say that the items are put down at prices

nearly double of those of the same character of work in the United States; but even if the cost of the Tehuantepec road exceeded three or four times the estimated cost, the certain and immense income that it must afford, when completed, would more than justify its construction. Of this there can be no doubt.

This leads us to consider the probable income of the road.

The fact that the Tehuantepec route to the Pacific, for all countries north of the equator, and east of the meridian of Minatitlan, is the shortest, and that the isthmus, when the road is completed, can be crossed by steamboat and rail-road, in six hours, must inevitably draw into that route the great mass of all the travel to the Pacific and back again, and also a very large share of all the trade between the Atlantic and the Pacific. The following table, which we take from the work cited at the commencement of this article, will show, at a single view, what the world will gain in distance by the Tehuantepec route.

Voyage to San Francisco, in California.	Via Cape Horn.	Via Panama.	Via Nicaragua.	Via Tehuantepec.
From England.....miles,	13,624	7,502	7,041	6,671
" New-York,.....	14,194	4,992	4,531	3,804
" New-Orleans.....	14,314	4,505	3,767	2,704

		Distance via Panama.	Distance via Nicaragua.	Distance via Tehuantepec.
Saved by England.....	——	6,122	6,583	6,953
" New-York	——	9,202	9,663	10,390
" New-Orleans.....	——	9,809	10,547	11,610

We can form a pretty accurate estimate of what the travel and amount of freight will be across the Isthmus of Tehuantepec, as soon as the rail-road is completed, from the amount that now goes by the way of Cape Horn and Panama. The number of passengers who have passed by the way of Panama and Nicaragua during the three years, ending December 24, 1851, is 423,960, or 141,320 annually. The amount of freight during the same time was 47,000 tons. We may safely conclude that, if the Tehuantepec road was completed, it would attract at least two-thirds of these passengers and freight, which would be 92,000 passengers annually, and 31,000 tons of freight.

There is another consideration which will turn all the travel, if not all the freight, towards the Isthmus of Tehuantepec; it is that this route is entirely free from those malignant fevers and dysentery that render the route by Panama and Nicaragua so dangerous. Yellow fever has never been known to occur on the Isthmus of Tehuantepec. Mr. Williams, in his report on the climate of the Isthmus of Tehuantepec, says: "The climate of the isthmus is a mild and healthy one, favorable to longevity, and free from many diseases incidental to more temperate latitudes. Compared with other places selected for forming a junction between the two oceans, this isthmus has peculiar advantages. With less alluvial land at the sea level it is more healthy than San Juan de Nicaragua, and from its more northern latitude its mean annual temperature is less than that of Nicaragua

or Panama." This is fully confirmed by the report of Dr. Kovaleski.

Lieutenant Maury estimates that the Tehuantepec rail-road, when completed, will realize from the Pacific whalefisheries alone, in freight, the sum of $970,800 annually, and that those engaged in the whale fishery would save, annually, $2,424,000 by sending their oil every year across the isthmus, instead of keeping it in their ships, and sending it home once every three years.

Nothing is more plain, than that commerce will always seek the markets of the world through the shortest channels, and especially when the shortest routes are the most healthy and safe. If, as we have shown above, England will save 6,953 miles by the Tehuantepec route to California, who can doubt that she would at once prefer that route? The thing is too plain to require argument. If the New-York merchant, too, saves 10,390 miles by availing himself of the Tehuantepec route, in sending his goods to California, it is quite certain that that route must have, as soon as opened, all the freight from New-York destined for California. We must also say the same of every part of the United States. What, then, will be the amount of business done by the Tehuantepec Rail-road, when it is completed and in full operation? We shall not exaggerate much if we say, that the Isthmus of Tehuantepec, and its two great ports, the one on the Atlantic and the other on the Pacific side, will then teem with half the commerce of the world. A Tyre on one side will balance a Sidon on the other. It will be found, too, that an ordinary rail-road will not do the business required, and that a ship-canal, or a rail-track carrying cars of triple the ordinary size, and drawn by monster locomotives, will be the only means of satisfying the demands of commerce.

The Isthmus of Tehuantepec is one of the most delightful regions on the globe; and should the proposed road be constructed, it is destined to become densely populated. The whole region, with the exception of some portions of mountainous parts, is highly fertile, and densely covered with the gigantic trees and shrubs of the tropical forests. The forests are truly magnificent, exhibiting an almost endless variety of trees, variegated with foliage of every hue, and entwined and interwoven with innumerable vines, which, climbing to the tops of the tallest trees, arch and trellis the winding picaduras, so as almost completely to intercept the direct rays of the sun. Some of these vines are more than a foot in diameter, and contain large quantities of pure, sweet water, furnishing a welcome beverage to the thirsty traveler; others, as the vanilla, load the air with their delicious fragrance; and others, again, are covered with flowers of various hues. The trees grow to an immense size, presenting many varieties which are valuable, either for the timber they furnish, the gums, oils, and balsams they distil, the medicinal properties they possess, or the fruits and flowers they bear.*

The principal forest-trees are the India-rubber tree, in great abun-

* Isthmus of Tehuantepec, p. 47.

dance, the mahogany, lignum-vitæ, acacia, achote, maney-zapote, tamarindo, cuapinol, fern-tree, the huge ceiba, the grotesque palo amate, a great variety of palms, &c., &c.

On all the rivers are seen huge specimens of the most valuable trees of the equinoctial regions, mingled with a hundred varieties of *palmæ*, gracefully towering above plants of the most dense and impenetrable foliage, whose masses of verdure sweep the current at every sinuosity. The view presented to the eye, in these sylvan scenes, is often of the most enchanting nature. The varieties of the palm-tree are very great; and the diversity of its useful purposes is not less so. One kind yields substitutes for bread and yeast; another, sugar and wine; a third, oil and vinegar; a fourth, milk and wax; a fifth, resin and fruit; a sixth, medicines and utensils; a seventh, weapons and cordage; an eighth, paper and clothing; and a ninth variety furnishes habitations and furniture.*

The value of the mahogany and cedar timber of the isthmus is immense. These trees often reach a diameter of five and six feet. Indeed, all the vegetable world within the tropics is on the most gigantic scale, for there the vegetable powers of nature are seen in their fullest development, in the present condition of the earth.

Not less important is the India-rubber tree, found in astonishing numbers on all the streams of the isthmus. Its value, however, is so little appreciated by the natives, that they gather the gum only for foot-balls, or for some few medicinal purposes. It is estimated that there are at least 2,000,000 of India-rubber trees in the northern third of the isthmus, within the Garay grant. A tree yields from four to five pounds of gum in a year. If we suppose that only one half of these trees yielded but one pound each, the annual amount of gum produced would be 1,000,000 of pounds; which, at 40 cents per pound, the present value, would be worth $400,000.

Among other valuable spontaneous productions of the isthmus is the *brometia pita*, or ixtle. It is a plant yielding fibres varying in quality from the coarsest hemp to the finest flax. The simplicity of its cultivation, and the facility of extracting and preparing its products, render it of universal use. From it are manufactured thread, cordage, mats, bagging, clothing, &c., &c. Paper is also made of it. The cultivation of the ixtle is extensively pursued in several places on the isthmus.

Of the maize, frijoles, sugar, cacao, tobacco, coffee, and cotton raised on the isthmus, it is difficult to speak, says Mr. Williams, in terms which might convey an adequate idea of the adaptation of the soil and climate to their cultivation. The isthmus is the native country of maize, and upon the wet lands the yield is two crops a year, averaging 60 bushels to the acre, and that, too, without other labor than the mere planting. In favorable years *three* crops have been raised, of 70 bushels to the acre.

The sugar cane on the isthmus is of astonishing magnitude and richness, the stalks not unfrequently exhibiting *twenty-eight* joints, with

* Williams' Isthmus of Tehuantepec, pp. 182-3.

a diameter of from two to three inches. It grows wild in the valleys. American sugar-planters, located on the isthmus, would soon enrich themselves by taking advantage of the superior luxuriance and richness of the sugar-cane in that region. Tobacco of the finest quality grows equally well in all parts of the isthmus.

The lands east of the Coatzacoalcos, and along the Gulf of Mexico, yield *allspice* in great abundance. This valuable fruit grows wild, and its cultivation is entirely neglected. It is estimated that it might be gathered annually there to the amount of $50,000. *Coffee* grows wild in the greatest abundance, and with few exceptions, no pains are taken to cultivate it, although it is of very superior quality. Chocolate is the prevalent drink of the natives, which accounts for their neglecting the cultivation of coffee.

Rice grows luxuriantly, and one single sowing yields two large crops without any additional labor. The fitness of the soil of the isthmus for *cotton* is beyond question, and the army worm is entirely unknown there. It is cultivated but little, as there are no gins in the country, with the single exception of one at Acayucam.

An enumeration of all the valuable vegetable dyes found on the isthmus would fill a volume. The indigo tree is indigenous there. Also the logwood, Brazil-wood, and the *Morus tinctoria* of Linnæus, which yields the dye known as "old fustic," are in great abundance. We cannot in this paper enumerate the tenth part of the valuable vegetable productions of the isthmus, and must refer the reader to Mr. J. J. Williams' work, entitled *The Isthmus of Tehuantepec.*

Every known species of tropical fruits grow in the isthmus in the greatest abundance. We can only mention a few of them remarkable for their delicious flavor, nutritive qualities, and abundant growth, such as the chico-zapote, lemoncillo, orange, chayote, cocoanut, lemon, pine-apple, (sometimes found weighing 15 lbs.,) melon, mamey, chiraymoga, citron, mango, banana, plantain, guava, and pomegranate; also the sweet potato and yam.

It is impossible to give an adequate idea, in a short paper, of the boundless vegetable riches that nature has lavished upon the Isthmus of Tehuantepec. As if designed to be the great highway of nations, it teems with the elements of wealth, and offers inducements to emigration that it will be difficult to resist, when the rights of the Tehuantepec Rail-road Company are fully established. What that isthmus will become in the hands of the enterprising citizens of our Republic, it is not difficult to foresee. In the hands of Mexico it will never be anything. She presides over it like the dog over the hay in the manger—unwilling and unable to use it herself, or to let others use it. But it must and will be ours; and in our hands it will be put to those valuable uses for which God intended it.

We did intend in this paper to give some account of the *fauna*, the inhabitants, the towns, productive industry, and of the geology and mineralogy of the Isthmus of Tehuantepec; but these subjects would, each of them, occupy an ordinary paper, and we must, therefore, reserve them for another time.

V.—PUBLIC LANDS OF TEXAS.

DEAR SIR:

BY an estimate made at the General Land Office of the United States at Washington, the present area of Texas is 151,885,440 acres, equal to 237,321 square miles. By our land office it is estimated at a higher figure. The amount already granted is about sixty or sixty-five millions of acres, though only 42,623,118 acres have been assessed, and 45,234,987 acres have been patented and returned for patent—showing a balance of fifteen or twenty millions of acres that are yet either unsurveyed or not returned for patent. Owing to the general anxiety to obtain patents on surveyed lands, the general belief is, that these fifteen or twenty millions of acres are yet unlocated in great part. If so, there remains yet about 110,000,000 of acres in the state subject to location, and about 90,000,000 or 95,000,000 more than all the land claims yet issued by the various authorities that have existed in this state will cover. There is, then, an immense field for the location of lands, and an opportunity for the investment of money in them, which was never better than at the present moment. Because heretofore there was so much uncertainty in regard to our government's stability, and also in regard to the validity of many land claims offered in the markets, that investments were not desirable. But now that annexation has established the perpetuity of our government, and various acts of our legislature and decisions of our Supreme Court have decided the validity of many of our large land claims, and fixed the requisites necessary to the validity of most others, the uncertainties in both cases may now be avoided by any one acquainted with our land system, so different in many respects from that of the United States.

Of the lands subject to location at present, probably one-third, or thirty or thirty-five millions of acres, are fully equal to that already occupied. On the vacant lands are known to be mines of silver, lead, copper, gypsum, &c., and vast quantities of excellent limestone, sandstone, granite, slate, and other kinds of building stone. Of the remaining two-thirds yet subject to location, nearly all of it is well adapted to pasturage, and but little of it is the absolute desert it is thought to be by many. The desert parts are only about the heads of the River Colorado, Brazos and Red River, and some districts on the Rio Grande.

When it is considered that the thirty or thirty-five millions of splendid farming lands yet subject to location lie mainly within the parallels of thirty and thirty-four degrees of north latitude, which is the true cotton region—that the countries west of Texas within these parallels are not adapted to the production of cotton in consequence of their peculiar climates—the certainty that these lands will very soon come into market is manifest. It should be considered, too, that there are now about 3,000,000 slaves in the southern states, increasing at the rate of nearly thirty per cent. every ten years; that within that time (the next ten years) a home and lands to cultivate

must be found for another million of them, and that the old states can accommodate but few more of them in their present pursuits profitably;—the conclusion is reasonable, I think inevitable, that Texas, and particularly that part of it under consideration, must fill up very rapidly. The demand for new land must continue to increase. It is estimated by well informed gentlemen, that the increase of population last year was not less than about 150,000—of whom, probably, one-half were slaves. Supposing this estimate to be extravagant, yet it is undeniable that an immense immigration came to Texas last year, and that the tide is yearly increasing, and that too, in the face of short crops the last two or three years, especially the last. These considerations, with the increase of information in regard to this state, its superior advantages in regard of soil, climate, salubrity and valuable productions, with the removal of objections on the score of society and morals, will undoubtedly soon fill it up with an enterprising and energetic population.

If the Mississippi and Pacific Rail-road is ever really built, it must pass through the centre of this territory, now totally unoccupied, and various branches must leave the main road in this territory, thus causing towns, and perhaps cities, to be built in it. These branches will connect various points on the gulf coast, and other points on the north side of the road. The probability that a road will be built to the Pacific, commencing either at Memphis, New-Orleans, or Vicksburg, is very strong; and all of these roads will proceed to El Paso, to proceed thence to the Pacific by the most eligible route. Consequently the road must finally pass through this upper Brazos and Colorado country, as it is by a vast difference the most level and practicable route; and if it commence either at Vicksburg or Memphis, it will pass through the whole of the best part of the unoccupied territory above alluded to. As it would pass through the centre of the great cotton-producing belt of country, planters would soon crowd the land near it for the purpose of supplying the markets of China and other eastern countries with raw cotton,—and manufactories would soon be erected upon every eligible spot, to supply the same markets with the manufactured goods they may need.

Were this road built, the country near it not only in Texas, but all along the whole length of it, would be densely populated by the time-saving and enterprising people of the whole South. It can easily be shown, that it would save to the planter of this region, nearly, if not quite, half a year on an average, which, without this road, would be lost before he could get his crop to any market. It would soon become an avenue of trade and travel unexampled in the history of the world. The mines of New-Mexico, Chihuahua and Sonora, and of other Mexican states, would become accessible, and would yield an amount of the precious metals not now dreamed of. California and Oregon would also yield much more, because many more would rush thither over the road to assist in reaping the golden harvest.

These facts and considerations I think, demonstrate that investments in lands in this unoccupied territory will prove eminently profitable.

I append a calculation of the capabilities of Texas, based upon the observed results of planting hitherto.

Of the 151,885,440 acres in the whole state, say that only half is adapted to cultivation,—the other half being waste, or suited only to pasturage. This is much too large an allowance for poor land, but I will make it so. Of the half supposed to be adapted to cultivation, say that one-tenth is adapted to sugar:—7,594,272 acres, producing an average of a half hogshead per acre, equal to 3,794,136 hogsheads, worth at $40 per hogshead, $151,885,440. Allow one-quarter to cotton, it is 18,985,600 acres, producing say 500 pounds per acre, as a general average one year with another, though I think this below the truth, as our best cotton lands will bring from 3,000 to 4,000 lbs. per acre, and the poorest seldom less than 400 lbs., and of good seasons often rising to 2,000 lbs. per acre. Allowing 1,500 lbs. seed cotton per bale, the amount is 6,328,560 bales, worth at $25 per bale, $158,214,000. Allow one-tenth to corn, 7,594,272 acres, producing 25 bushels per acre, amounting to 189,856,800 bushels, at 50 cents per bushel, worth $94,928,400. I have not known corn less than 50 cents per bushel in fourteen years' residence, taking the average of a whole season. One-tenth in wheat, 7,594,272 acres, producing fifteen bushels per acre, amounting to 113,914,080 bushels, worth $1 per bushel, $113,914,080. Fifteen bushels per acre is the lowest estimate of wheat produced per acre that I have heard of—40 bushels are often gathered. Another tenth in oats and rye, 7,594,272 acres, 10 bushels per acre, 75,942,720 bushels, worth 50 cents per bushel, amounting to $37,971,360. There remain three and one-half-tenths, equal to 37,579,952 acres, for potatoes, turnips, orchards, gardens, woods, vineyards, but these may be left out of the present calculation as not yielding much to external commerce. Many of these things would be very valuable, however. Rice could be grown very well in some places, as also could oranges, bananas, apples, pears, peaches, figs, melons, &c. An immense quantity of fine timber can be obtained in the eastern and middle portion of the country, and any quantity of live oak may be got in the southern and western parts, and as high up the Brazos as the Crossing of Shackleford's Trail, and perhaps higher. Cedar, mezquit, bois d'arc, and other timber, also abound in many places. Silk culture could doubtless be successfully pursued on the lower Sabine and Nueces. The fish and oysters of the coast might be made a source of considerable trade and revenue. The mines have been alluded to, though little is known of them except their existence. Coal is abundant at many points.

Let us see how many people will be required to cultivate this land. Say, 15 acres are a fair quantity of land per hand as a general average; say that seven-tenths of the half capable of cultivation are cultivated. This amounts to 53,159,904 acres—to 3,543,994 laborers; and 30 acres to each horse to plow would give 1,771,997 plow-horses. If there were two other persons to every laborer, (i. e. children or women,) the number would be 10,639,982. Probably an equal number would be engaged in internal and external commerce,

the learned professions, manufactures, and various other occupations, making a total of 21,263,964, or one person to about every seven and a half acres of land. Some countries sustain one person to every two or three acres of land. At this rate Texas could sustain seventy-five or fifty millions. Estimating the population at 21,263,964, and the average amount of cotton goods consumed by each at thirty yards, it would require 637,918,920 yards; to make which would require 212,639,640 pounds, or three yards per pound, of cotton, equal to 531,599 bales, at $25 per bale, worth $13,289,975. This would leave for foreign consumption and for manufactures, 5,769,960, worth $144,924,025. If each person consumes 30 lbs. of sugar, the amount is 637,918,920 lbs., equal to 637,919 hogsheads, worth at $40 each, $25,516,760, leaving for export 3,156,217 hhds., worth $126,248,680. The corn, wheat, oats, rye, &c., would probably be all consumed in the country. But sugar and cotton alone yield the enormous sum of $271,172,705 worth for export—a sum nearly double the present exports of the whole U. States! And the import trade would equal, or exceed this large sum. In the above calculation are not included the fruits, cattle, hogs, horses, molasses, mines, and the increased value given to cotton and other raw materials by processes of manufacture. This magnificent result is entirely within the limits of possibility, and probably it will be consummated in no very long period of time. Compared with such immense annual returns of agricultural wealth, the mines of California are poor; and while the gold is constantly diminishing, careful husbandry will be annually increasing the fertility of Texan fields. Immense beds of marl, gypsum and lime, will enable the farmers to keep up their fields at little expense.

RECAPITULATION.

Area of state				acres	151,885,440
One half tillable				"	75,942,720
Devoted to cotton			2½ tenths	"	18,985,680
" to sugar			1 "	"	7,594,272
" to corn			1 "	"	7,594,272
" to wheat			1 "	"	7,594,272
" to rye and oats			1 "	"	7,594,272
Small crops, potatoes, gardens, &c					27,579,952
Producing cotton	bales	6,328,560		value	$158,214,000
" sugar	hhds	3,794,136		"	151,885,440
" corn	bush	189,856,800		"	94,928,400
" wheat	"	113,914,080		"	113,914,080
" rye and oats	"	75,942,720		"	37,971,360

Small crops all consumed.

FOR EXPORTATION AND MANUFACTURE.

Cotton	bales	5,796,960	value	$144,924,025
Sugar	hhds	3,156,217	"	126,248,680
Total				$271,172,705*

The population of Texas, in the revolution of 1836, was supposed to be between 25,000 and 30,000; in 1848, was about 140,000; in 1850, about 200,000. The population now is about 350,000.

* We presume that our Texas friend means that these calculations will be realized when the population of the United States shall be as dense as that of China, and extend as far as "manifest destiny" will allow it. After all, however, it is as easy to see through a mill-stone as into the future.—[Ed.

AGRICULTURAL DEPARTMENT.

1.—THE SUGAR-CANE PLANT, SEED CANE, &c.

THE sugar-cane (*Saccharinum officinarum*) classed in botany as being a genus of the *Triandria digynia*, is a gigantic member of the *Gramineæ* tribe; and, in all its characters, is indubitably one of the most important plants afforded us by a bountiful Providence. One of its products, sugar, is so extensively used, and is in every way such a blessing to mankind, that every exertion should be made to supply it to our poorer fellow-creatures at as cheap a rate as possible.

It is used in every possible way: for sweetening and rendering palatable numberless dishes and liquids, and in making syrups which sweeten, thicken, and preserve the vegetable juices that are made use of in medicine. Fruits are boiled in syrup, and kept under the name of preserves, or sent on voyages to all parts of the known world. It is a well-ascertained fact, that man cannot only exist, but absolutely become stout and healthy, on sugar and water alone. This was evidenced by the crew of a ship bringing home a cargo of sugar: she encountered sundry disasters, which, together with calms, delayed her so long on her voyage, that all her provisions were consumed, and the crew were obliged to have recourse to the sugar on board; this not only sustained the men, but actually quite cured them of the scurvy, which had made sad havoc amongst the crew previous to their being reduced to this, their last and most providential resource: supported by this agreeable aliment, they reached their port in safety. This is by no means a solitary instance of the antiscorbutic properties of sugar; whilst its nutritious and fattening qualities are abundantly shown on every sugar estate in the world. However, as this admits of no doubt, I need not dwell on so clear a fact. Sugar is also an excellent antiseptic, much more powerful than even sea-salt; whilst, again, it is recommended by Orfila, as an antidote to the poison of verdigris and oxide of copper.

Nor are its admirable qualities appreciated by mankind alone; for the very beasts of the field, the birds of the air, and numerous reptiles and flies, delight in its sweetness and fatten under its influence.

A most absurd and vulgar prejudice once prevailed against the use of sugar in any quantity: it was said to be unwholesome, to breed worms in the stomach, to injure the teeth, to cause nausea, &c.; whereas undoubted experience has demonstrated that its effects are diametrically opposite to all this; as nothing can be more wholesome, more destructive to worms, less injurious to the teeth, or less calculated to produce nausea. Whenever nausea is produced, it invariably arises, not from the sugar, but from the vile trash mixed up with it under the general name of sweetmeats or sugar-plums. Should any one doubt this latter fact, an analysis of these articles, taken from any confectioner's shop, will readily prove it.

As a primary principle, we desire to obtain year after year, from a given quantity of land, the largest possible amount of first quality sugar, at the least possible expenditure of time, labor, and money. Such results can only be hoped for when the canes to be manufactured are brought to the mill in as perfect a state as the cane plant can arrive at, when the manufacturing apparatus is on the most approved principles, and when the process of manufacture is skilfully, scientifically, economically, and cleanly conducted in all its branches.

We see, then, that success depends on three distinct circumstances operating in unison; failure in one of which will certainly cause a decided loss more or less: perhaps so considerable as to stamp the whole affair as a vain attempt.

The first of these circumstances, therefore, requires that I should show the peculiar organization of the cane plant and the conditions under which the saccharine or crystallizable principle is elaborated and secreted in the greatest abundance. The variations indicated by the saccharometer, together with the disappointments continually expressed by planters in regard to cane juice, prove how little this subject is understood by the planting body, and how highly necessary it is for them to attend to so important a consideration.

When we reflect that cane juice has been known to show twelve degrees by Beaumé's saccharometer, and yet very frequently arrives in the boiling-house at six

degrees only, and very rarely indeed, higher than eight or ten degrees, we must be struck at the enormous loss sustained by the planter.

But to go further, I do not think it has yet been ascertained in any satisfactory manner, what degree of richness cane juice can be brought to by a rational system of cultivation: 20 per cent. may be its maximum; but I am inclined to think not.

What Mr. Crawford says of average cane juice (in Java) yielding 25 per cent. of sugar, is, without question, a most palpable absurdity; as I will show hereafter: besides, I have clearly ascertained (on authority of the best) that 14 per cent. is there considered high; the average being only 10 per cent. However, leaving this point to be discussed hereafter, I believe enough has been said to prove how imperatively an improvement is demanded in our system of cultivation; and I would earnestly desire the attention of the planting body to the remarks I am about to make on the subject.

It must be very apparent to every one, the great influence which particular soils, climates, and seasons exercise on the growth and development of so sensitive a plant as the sugar-cane; and it necessarily follows, that the more perfect our knowledge of the nature of such influences, the greater assurance have we of the success of our operations.

I will proceed, therefore, to demonstrate the causes which materially affect the growth of the cane, its proper development, and the elaboration of its juices.

To render this more clear, it is requisite that I should glance at the vegetable economy of the plant, its structure, and the mode in which it extracts substances forming sap from the soil, by means of its roots; also, at the manner in which this sap circulates, and is transformed by the action of the leaves and other green parts into nourishment befitting the plant, and the peculiar circumstances under which the saccharine or crystallizable matter is deposited in the cells, in the greatest abundance. In elucidating these points, I wish it to be distinctly understood that I avail myself of the opinions of the most eminent writers on organic chemistry, &c., (such as Liebig, Raspail, and others,) with which I entirely agree; as I shall endeavor to abbreviate and simplify them, to suit the character of this work, without making a constant repetition of their names.

Every planter knows that the cane plant is propagated by cuttings from the cane itself; which are usually the few upper joints of the plant nearest the leaves, commonly designated "the cane top." But sometimes the whole cane is cut up in pieces, and planted out; as every part having a perfect eye or bud will spring forth a plant.

The cane-cutting, which is used for planting, may be either one, two, or more joints of the cane itself, taken from any part of the cane stalk; as each joint possesses one eye or bud. On being planted, these eyes shoot forth; and at the same time a number of roots are thrown out around the whole circle of each joint, which serve to supply the young plants with sustenance until they are sufficiently advanced to throw out roots of their own.

It appears that, by depriving the cane-cutting of these roots, the young shoots will continue growing for sometime, and then die away before they have become strong enough to form roots of their own. For experiment, place some pieces of cane amongst mouldy straw, in a moist and hot place, and in a few days delicate roots will appear in abundance from the joints; cut off these fibres neatly with a penknife when they are about an inch and a half, or two inches long, taking care not to shake or remove the pieces of cane: watch if further roots appear, and if so, cut off the fibres, as before.

During this time the buds will have sprung forth and be growing fast; but it will be observed, that in the course of a few days after the roots are removed, the shoots begin gradually to wither away, and will finally die; notwithstanding all the care they may in other respects receive. This goes to show, that, although the pieces of cane which are planted abound in sugar, gluten, mucilage, &c., yet these alone cannot support the young shoots; which also require the absolute presence of roots, to supply, by their peculiar action, that kind of sap which I shall call "ascending sap;" being a watery solution of earthy salts. Now, in the cane, this sap is supplied by the roots emanating from the piece of cane planted, until the young sprouts or shoots become furnished with perfect roots of their own, when the parent piece dies away, and gradually decays. The sprouting of the eye, therefore, is simultaneous with the formation of roots; and both combined, constitute the effort made by the cane to reproduce itself.

With the formation of a leaf or leaves, a new action commences, (it may be termed a transformation of organic substances,) by which that watery solution of earthy salts constituting the ascending sap is first transmitted from the roots to the leaves, where it undergoes an elaboration which changes its character. The functions of leaves and other green parts of plants are to absorb carbonic acid, and by the aid of solar light and moisture to appropriate its carbon: hence they are called "organs of assimilation." On the first formation of the leaves, these functions commence: they are at first more particularly employed in their own development; afterwards in the formation of woody fibre and other substances necessary for the general purposes of the plant.

Having already mentioned the sap, which I have designated the *as*cending sap, in contradistinction to the *de*scending sap, it is better to discuss the important subject of its circulation and chemical transformations at once, than to defer it longer. It is of course obvious that the roots are immediately connected with the sap-vessels, which receive and transmit the sap throughout the whole plant: but this is not all; for the sap-vessels are of two classes, viz; the ascending sap-vessels, and the descending sap-vessels; both communicating with the various organs of assimilation. The circulation is also of two characters: the first, that which is termed cellular, and the second, that denominated vascular.

The cellular circulation is that which occurs within the cells, and presents the appearance of two contiguous but unmixed currents running in opposite directions; the vascular circulation, on the other hand, is that which occurs in the vascular network, and exhibits only one continuous current in every part of the tubular vessels. The well-established fact of the power possessed by vegetable membranes, of aspiring and expiring surrounding liquids, explains the means whereby such circulation is kept up. The roots, then, supply a watery solution of earthy salts (or sap *not* tending to organize) to the sap-vessels, through which it ascends, and is diffused even to the very extremity of the leaves; whence it returns (transformed into a sap *tending* to organize) through the descending sap-vessels again to the roots.

In this progress through the plant, the sap is drawn into the different organs in succession; the desirable parts are assimilated, other parts are rejected and pass on; until, at length, those which remain unappropriated, reach the roots, and are voided as excrement.

We here find the roots performing two distinct functions, viz: the collection and transmission of nutriment, and the discharge of excrement. To enable them to perform these important duties, they are found to possess powerful organs of aspiration, by which they suck in those aqueous solutions which constitute the ascending sap; and also other organs, by means of which they expire those substances which, unsuitable or otherwise, have been rejected by the various organs of assimilation through which they have passed.

Most people have remarked the extreme tenacity with which some roots cling to rocks, stones, pieces of gravel, sand, bone, wood, or other substances; and the roots of the cane plant, amongst others, will be found adhering to minute fragments of gravel, sand, wood, &c., (forming soil,) in the same manner: yet I may venture to say, that nineteen persons out of twenty do not consider that such adhesion is caused by suction; or, in other words, by the powerful aspiration of the roots, which alone produces that suction.

Such is, in reality, the case, however; and the fact serves to show us, in a forcible manner, the wonderful power exerted by these organs of aspiration. Endued with this faculty, the roots can only extract nutriment from the soil through the medium of water; which renders soluble the constituents whereof the soil is composed. It is obvious how much must depend, in cultivation, not only on the richness of the soil, but on the supply of water which is afforded the plant; as, without an ample allowance of this essential, that richness cannot become soluble in sufficient abundance, and consequently the plant is more or less pinched for want of nutriment. It, however, often occurs that the supply of water is too great: this has a tendency to do injury to the sugar-cane, at particular periods; inasmuch as the cane may be required for sugar manufacture when its juices are from this cause too aqueous.

The nature of the soil, also, must greatly affect the quality of the sap, and influence, both in quantity and quality, the sugar produced by the plant: however, this consideration more properly belongs to another branch of the subject.

I have thus briefly described the functions of the roots, and explained that "the

ascending sap," or "sap not tending to organize," is transmitted to the leaves, and other parts of the plant, and undergoes an elaboration by which it is transformed into a "sap tending to organize." I will now, therefore, touch on the manner in which this transformation is effected.

Within the tropics, the twenty-four hours may be said to be equally divided into twelve hours of day and twelve hours of night; consequently the leaves, and other green parts of the cane, inhale carbonic acid and exhale oxygen during twelve hours of daylight; whilst during twelve hours of night they inhale oxygen and exhale carbonic acid.

Whilst light is present, carbonic acid is absorbed, and its carbon appropriated: but in the absence of light, the process of assimilation is arrested; because the carbonic acid is no longer decomposed, but is dissolved in the juices which pervade all parts of the plant, and escapes every moment through the leaves, &c. But whilst daylight is so necessary in this respect, it is also equally necessary to the assimilation of hydrogen. Now, hydrogen is received by the plant in the form of water; which, by the aid of light, it decomposes; emitting its oxygen and appropriating its hydrogen. Again, oxygen is necessary to the plant; therefore we find, that whilst the plant is absorbing water by the roots and carbonic acid by the leaves, and by the aid of light, decomposing both, still the oxygen separated from each is not wholly exhaled; but a portion sufficient for its purposes, is retained and appropriated, as are the hydrogen and carbon.

We can imagine how large an amount of oxygen is set free by plants, when we consider the quantity of water and carbonic acid absorbed by their different parts: the roots, for instance, in a moist soil, are constantly transmitting an abundance of watery sap; which water, being decomposed, sets free the oxygen contained. With the carbonic acid absorbed, the same evolution ensues on its decomposition.

The quantity of oxygen thus supplied to the atmosphere is really much greater than the amount derived from it; although the plant absorbs oxygen from the atmosphere at night. The decomposition of carbonic acid is no sooner arrested by want of light, than a true chemical process commences: in consequence of the action of the oxygen in the air upon the organic substances composing the leaves, &c., of the plant.

This brief and simple explanation, I think, renders it clear, that it is through the decomposition of water and carbonic acid, that hydrogen, carbon, and oxygen are obtained by the plant; these serving to constitute the descending sap—"a sap tending to organize."

Attached to each joint of the cane plant is one leaf, whose peculiar office it is to supply elaborated sap (or sap comprised of earthy salts, nitrogen, &c., blended with carbon, oxygen, and hydrogen) to the various cellular and vascular organs existing in that joint; it therefore follows, as a matter of course, that if the joint be deprived of its leaf before this has completed its functions, considerable loss and injury must accrue to it; inasmuch as the joint is then reduced to a dependence on the nutriment its organs can derive from the already exhausted sap descending from the joint immediately above it. Hence we find that by depriving a joint of its leaf, that joint is never fully developed, but becomes contracted and imperfect. Here we see the necessity of allowing the leaves to remain on the plant until they have performed their office; when the chemical influence of the oxygen of the air produces a change in their color, and shows that they may be removed with safety.

Planters are very much in the habit of planting canes too closely together; which again leads them on to "trash" those canes too heavily: *id est*, to strip off by hand the leaves of the cane plant, in order to allow air and light to penetrate.

Much intelligence, surely, is not required to convince one that such a practice is erroneous, and, indeed, pregnant with evil consequences. Only fancy rich land planted with canes in rows but three or four feet apart, which grow up so close and tangled that a person cannot walk between the rows without great difficulty, and are so dense that no ray of light can penetrate; then consider the course pursued by the planter: he sends in laborers, once, twice, thrice, with orders to "trash heavily;" or in other words, to strip off, not only every dry leaf, but also every green leaf—except just the few top ones—so that the miserable canes are left in woful plight—naked and wretched in appearance, and rendered quite incapable of perfectly developing several joints in each cane.

Surely our intelligent planters will no longer pursue such an irrational course!

If they reflect on the simple, though necessary requirements of the plant to be cultivated, they will find that economy of time, labor, and money, and increased quantity and quality of produce, will result from a change of practice.

We often hear of "cane seed;" and latterly a very earnest inquiry was set on foot with a view to decide the question whether the sugar-cane is really raised from seed in any part of the world, or not; which terminated, I believe, in establishing the fact of there being no country known wherein the cane is, at present, raised from seed: whatever may have been the case in earlier ages. Bryan Edwards, in his work on the West Indies, says: "In Abyssinia and other parts of the East, it is easily *raised from the seed.*" Referring, accordingly, to Bruce's Travels, "we find," he says:

"About four miles from this is the village of Nizelet el Arab, consisting of miserable huts. Here begin large plantations of sugar-cane, the first we had yet seen. They were loading boats with these to carry to Cairo. I procured from them as many as I desired. The canes are about an inch and a quarter in diameter. * * * I was surprised at finding this plant in such a state of perfection so far to the northward. We are now in latitude twenty-nine degrees, and nothing could be more beautiful and perfect than the canes were. I apprehend they were originally a plant of the old continent, and transported to the new upon its first discovery; because, here, in Egypt, they grow from seed. I do not know if they do so in Brazil; but they have been, in all times, the produce of Egypt."

Such is Bruce's assertion, which has been so often quoted as proof positive of the cane being raised from seed!

Porter repeats the argument of the cane not being a native of America, as it is there never found to perfect its seed; whilst (on the authority of Bruce) he assigns to the East its original emanation. He writes: "The assumption that it has never been found native in the colonies of America, seems borne out by the fact, that, although it flourishes there, its organs of fructification appear to be without the power of fecundity. A whitish dust, or rather seed, is sometimes produced from the flowers; yet this being sown has never been known to vegetate in the West Indies; while in the East, canes may be raised from seed."

The constantly recurring idea that canes are raised from seed in Egypt and the East Indies, has kept alive a strong belief that the plant could be much improved by skilful cultivation and care, if this said seed could be obtained by European agriculturists. Hence, numerous have been the endeavors, both private and public, which have been made to become possessed of it. The Royal Agricultural Society of Jamaica took up the subject, and exhibited much industry in collecting information; and, for aught I know to the contrary, may still be pursuing the inquiry. As I have often been applied to on the subject, and have instituted many inquiries and experiments in order to satisfy myself and others, I take this opportunity of stating what I have ascertained on the point.

First. That no variety of sugar-cane is known to perfect its seed (or indeed, to produce anything like seed) either in India, China, the Straits of Malacca, Egypt, or even in the South Sea Islands; as in all those countries the cane is entirely propagated by cuttings.

Secondly. I have myself tried numerous methods, which I imagined might, by some possibility, cause the plant to perfect its seed. That many of these were fanciful, and perhaps far-fetched, I have no hesitation in owning. Under these circumstances, there is no need to make them public, or weary the reader with a long detail. It will be sufficient to give a brief account of two of my experiments, to show the principle on which I proceeded.

Experience and much consideration had quite convinced me that it was entirely useless to hope for any good results from cane flowers, of whatever variety they might be, being brought into contact with cane flowers. I therefore determined to try the *Guinea corn*, or Bajra, and the *Indian corn*, or Boota, with the cane plant. Now, both of these plants perfect their seed; and I ventured to hope, that, by planting them together, I might get the flowers of the Guinea corn and the Indian corn to impregnate and fructify those of the cane.

With this view I carefully manured the soil with such substances as I thought likely to assist the plant; and then, as they grew, cautiously but completely removed the eye or bud of each joint, as early as I possibly could, by cutting through the green leaf (without removing it) so as to get at the eye. Allowing a proportionate lapse of time, I planted the two descriptions of corn beside their appro-

priate cane plants; and as these grew up together, I brought the flowers into contact with each other, occasionally shaking them smartly, that they might shed their pollen on each other. The Indian corn I deprived of its buds as they appeared, forcing the plant to exert its reproductive powers on the arrow or flower, instead of the ears. My experiments succeeded admirably, so far as concerned the growth of the plants, their flowering together, and the production of seed on the arrow of the Indian corn; but, notwithstanding all my care and attention, I had not the gratification of seeing any seed appear on the cane plants so treated. Microscopic examination showed, that no change had been effected, as regarded the formation of seed; and the failure of this, my last hope, set the question at rest in my mind.

I feel satisfied that we shall not succeed in fructifying the flower of the cane; and, moreover, that we shall find no well-authenticated instance of the plant having been raised from seed. Indeed, I know of no sufficient authority for the belief that it ever was raised from seed.

So far as Bruce is concerned, I can readily understand myself—and imagine I shall have little difficulty in explaining to others—how, in all probability, he was mistaken in the matter. In the first place, I have often known men to whom I have remarked on the cane seeding, say: "But is it really a fact that the cane does not seed? I cannot certainly believe that; for I have seen whole fields of it in blossom, and the flowers hanging down as if quite heavy with seed."

Another told me that he has often passed fields nicely smoothed over, and on inquiring from the natives what was planted therein, has been told, sugar-cane: whereas, if pieces of cane had been planted in the field, he would have been able to see them sticking out of the ground; so that it must have been the cane seed which was planted, not pieces of the cane itself. These kinds of assertions I have very frequently heard made use of by really intelligent Englishmen, who had resided many years in India; but, like many others, had not been at the trouble of inquiring into matters that were not in their own particular line of business.

A native will sometimes leave a small patch of cane uncut, in one corner of his field, until his land is ready for planting; and if asked why he so leaves such cane, he will reply, "My land is not ready for planting yet, so I have left that for seed." Such an answer would be very likely to make a stranger believe that the native was waiting until his land was prepared, and the cane seed perfectly ripe: especially when he sees the canes in flower.

2.—THE COTTON INTERESTS, AND HOW THE PLANTERS MAY RECTIFY THE EVILS OF LOW PRICES.

We are indebted to Dr. W. C. Daniell, of Savannah, for this paper.

The Executive Committee of the Southern Agricultural Society respectfully submits to the consideration of the Cotton Planters' Convention, about to assemble in Montgomery, Alabama,* the question of offering a sufficient inducement to mechanical skill to supply a simple and effective machine to gin, card and spin, on plantation, from five to ten pounds of cotton per hour, so as to provide every planter, who may desire it, the means of converting, on his own premises, into yarn or twist, every pound of cotton which he shall produce. The elements of such a machine already exist; and all that is needed for its production is the inducement which a liberal premium would supply.

In the progress of society the objects of pursuit become multiplied. The deficiencies of yesterday are supplied by the ingenuity of to-day. Every new combination in supplying existing demands, creates new wants; and invention in fulfilling one want, creates another. This is the progress of society—fertile in expedients and rich in results.

The introduction of the culture of cotton in Georgia, as an export—for it had been grown in several of the southern colonies for domestic use—supplied the saw-gin, the invention of Nathan Lyons, to whose mind the circular saw on a wooden cylinder was suggested on seeing Whitney's gin—wire teeth in circles around the wood cylinder—in operation in Savannah. For a time, cotton was

* This Convention, which was to have met in May, has been postponed—why, we know not.

prepared by toll-gins for market—one or more in a county; next, the more enterprising planter would have his own gin, and cleaning, perhaps, the cotton of one or two of his neighbors as well as his own. Now, the cotton planter considers a gin a necessary element of his business, and the cotton press has become almost as indispensable a necessity.

Is this to be the limit (the *ultima thule*) in the progress of the cotton planter? Shall he remain content with what has been achieved? And multiplying his cotton bags, and consequently reducing their value, increase the profits of the spinners of his staple in the ratio of the reduction of his own? His cotton has stimulated all the improvements in machinery which have rendered it so important an element of commerce and civilization. And this has been the work of but little more than half a century. May he not participate in all the benefits, whose foundations rest on his labors? Why shall he incur so much of the toils, and partake so scantily of the advantages incident to his staple in its vast ramifications through society?

In a brief period in the lapse of time the annual production of cotton in the United States has risen from a few thousand to near three millions of bags, and in proportion to that increase has become the dependence of the great manufacturer, England, upon our slave-labor for her supply of cotton—a dependence almost involving the existence of her political, if not her social condition. Strenuous efforts have been made, and are not yet abandoned, to relieve herself from a dependence as mortifying to her self-love as dangerous to her future prosperity and independence. But Great Britain is not alone. The cotton spinners everywhere, out of the slave-holding states, profess to be grieved that they are dependent upon slave-labor for their cotton, and it would seem, as Manchester and Lowell are the loudest complainants, that the amount of grief felt at using our cotton is about in proportion to that of their profits—so that we may estimate, with some approach to accuracy, the amount of income derivable, in a manufacturing district, from the use of our staple, by the energy of its denunciations of slavery. "*Sed hæret in latere lethalis arundo.*" The love of mammon is not extinct, and our slavery carries a silent consolation, if not reconcilement to pharisaical philanthropy.

If our soil and climate do not, our slave-labor certainly does place us beyond the reach of rivalry in the growth of cotton. When free labor is engaged in the production of any commodity, the amount of labor directed to it is regulated by the relative amount of reward or wages which the price of the article supplies to that labor. In the slave-holding states, the great amount of existing slave-labor is directed to the production of cotton, and will be so applied, almost independently of the price of the article; certainly so long as cotton pays anything beyond the cost of production, preparation for and transportation to market, and by cost of production is here meant the actual outlay for the time, exclusive of the money value of the laborers and land. The soil and labor being property, the price of the product (cotton) regulates their value, and does not, to any perceptible extent, affect the amount of labor engaged in its growth; and hence the capacity of the slave-holding states to drive from the European market the cotton of any other country, the product of free labor. The character of our labor constitutes alike our strength and our weakness—our strength to maintain possession of the cotton market—our weakness to resist combinations against us, whom all the world denounce and cherish. Whilst our slave-labor secures a market for our great staple, there is a great, perhaps a growing, insecurity to remunerating prices to that labor. Whilst high prices will not increase our production of cotton much beyond the natural increase of our slave population, they stimulate production abroad, where another kind of labor is employed in its culture. And whilst low prices exercise but little influence in lessening our production, they are potent in reducing the production of cotton by free labor. The future condition of the cotton planter, under these circumstances, then, must mainly depend upon his own energies and his own resources. What these energies and resources are, the history of the past speaks in distinct and emphatic language. However much we are habitually calumniated abroad, and whilst these calumnies have given a sombre hue to the lights through which many of us at home look upon the future of our condition, it is certainly true that the slave-holding states will not compare discreditably with other states, under like circumstances, in any age or quarter of the world. The states north of us are estimated and judged of

by the commerce and thrift of their cities and the number and noise of their factories, without reference to the small per cent. of their whole population, living and laboring in them. We are an agricultural people;—our wealth, our population, our pursuits, our intelligence and our refinement, are of the country and in the country. It may be safely affirmed, that the society annually present at the prominent watering places south of Mason and Dixon's line, need not shun comparison with any other, elsewhere, for decorum, propriety, intelligence and good taste. That society is essentially southern and agricultural, and represents a much larger at home, which is stationary.

Our adversaries herd in the public marts; they fill up the highways; they combine; they control public opinion; they command the press, and exercise, not always, a just and wholesome influence over the opinion of the factors who sell our crops. They estimate our productions, and too often regulate the prices, upon data made for the occasion. We do not, perhaps we cannot, combine. We do not dispatch couriers through every district to learn and report the amount of the incoming crop. We cannot raise money upon our produce, although immediately as it passes into the hands of the merchant or speculator, he can raise upon it the price he has paid for it. If we endeavor to investigate the prospects of future prices, we can grasp only the information which the speculator and the manufacturer have prepared for their own purposes, and we sell our crops with the haste of an auctioneer getting off a cargo of West India fruit on a frosty day. If there be not, within the power of the cotton planters, the means of protection against all the disadvantages to which their position subjects them, they may yet do much to increase the returns on their invested capital, and exercise a salutary influence upon prices—to some extent enhancing them, and to a greater extent divesting them of their fluctuations, which, taken in all its bearings, is, perhaps, the greatest evil to which cotton planters are subjected.

Great Britain habitually imports about one-sixth more raw cotton than she manufactures, and, according to Baines, in his History of Cotton Manufacture, makes a profit of ten per cent. upon the exportation of a portion of that excess to Havre. And she converts into yarn and exports about one-fifth more of the amount of her imports of raw cotton. This is not the place to inquire into the means by which she is enabled to monopolize so large an amount of our raw staple, and to engross so large a profit by a mere transfer of what she cannot use at home, across the channel. It is more germane to the purpose of this paper to inquire if the cotton planters of the United States may not, themselves, spin and export part or all of that excess of yarn, which Great Britain spins, but does not make into cloth? The more direct and practical proposition is, may not the cotton planters look forward to the time when the exportation of raw cotton will be as rare as the exportation of seed cotton was thirty or forty years ago? There are not as great difficulties now to the spinning and exportation of yarns as existed some sixty years ago to the ginning and exportation of clean cotton. Then the cotton gin was in the hands of the patentees, who endeavored to make a "great East India concern of it" by establishing ginneries at numerous points in the cotton region, and coercing the planters to sell their cotton in the seed, by refusing to sell rights to use the gin. That scheme of monopoly, amounting almost to fraud, was defeated by the ingenuity of Nathan Lyons, who, as already stated, invented the saw gin. Now, all the elements for ginning, carding and spinning exist in machinery of almost perfect construction, and its adaptation to the planter's wants is alone necessary to enable him to spin his own crop at his own homestead. The spinning of cotton—as was one time the ginning of it—is a distinct pursuit, employing a distinct capital, and creating a distinct and antagonizing interest to that of the planter. The same energy that enabled him to unite the ginning out of his crop with the production of it, will now unite, in his own hands, the production, ginning, carding and spinning. And he will find that he will add proportionally more to the profits of his investment by carding and spinning than he has by ginning his crop; for the women and children may be readily taught to spin, in winter, what they have aided in cultivating and gathering. But a few years ago it was a matter of doubt, in the minds of many earnest friends of slave-labor, whether that labor could be successfully applied to what is called operative service—that is, to attendance on machinery engaged in manufacturing cotton and wool. But more recent experience in Georgia, as well as elsewhere, has fully proved that negroes make very good operatives. And they

are now employed successfully in many factories, and nowhere, it is believed, has there been a failure in the application of slave-labor to factory purposes. Many planters have felt the importance of reducing the production of cotton as the best if not the only means of enhancing the price. The chief difficulty has been to supply to the planter a remuneration equivalent to the loss supposed to be sustained by a reduction in the amount of his crop. To card and spin the cotton at home, will much more than give that remuneration, should the reduction of production amount to twenty or thirty per cent. upon his ordinary crop. The reduction in the crop would not be a necessary incident, though a probable one, on its conversion into yarn at the homestead, because it is confidently believed that the planter would be prompted by a clear conviction that he would find the greatest profit in growing no more cotton than he could convert into yarn by his own force; unless, indeed, he should call to his aid a portion of the white rural population, abounding in all the southern states, whose condition and comforts would be improved by becoming operatives in factories. These are, however, but little more than matters of detail, which every planter will readily decide for himself.

The purpose of this paper being to suggest, for consideration, the incorporation, into the plantation system, of an important economical element, eminently calculated to sustain that system, as is humbly believed, and impart new life to it, there is scarce occasion to present a systematic course of argument to the intelligence to which it is respectfully addressed.

In conclusion, it may be remarked, that whenever cotton planters shall have added to the growth of their staple machinery to gin, card and spin it for exportation, they will as certainly be enabled to undersell distant manufacturers of yarns as they have undersold the producers of cotton by free labor, and they will be in a position to dispose of their yarns at prices which will supply an active demand, with adequate remuneration for all the cotton which they can produce.

On motion of Dr. Daniell, of Savannah—

The fluctuations in the price of cotton have long been felt as a very serious evil to all the great interests of the country, and plans have been suggested to supply more steadfast prices, to an extent strongly indicative of the prevalence of this conviction. As a measure calculated in its tendencies to exercise some influence in correcting these fluctuations, the Executive Committee of the "Southern Central Agricultural Society" recommend to the Convention of cotton planters to assemble in Montgomery, Alabama, in *May next*, to offer a premium sufficient to stimulate the mechanical skill of the world to supply a *simple* and *effective* machine, calculated to gin, card, and spin into any of the numbers in ordinary use of yarn about ten pounds of clean cotton per hour, which cotton planters may introduce upon their plantations, to spin into yarn during winter, the cotton grown the preceding season.

WM. TERRELL, Chairman Ex. Com. S. C. A. S.

J. V. JONES, Sec., S. C. A. S.

3.—THE FIRST BALE OF COTTON.

The Charleston Mercury, in the annexed extract, contradicts our statement, (April No., 1852, p. 361,) that not a single bale of cotton, of this country's growth, was exported previous to 1787. The authority relied upon by us was "Smither's Liverpool," in which all the imports from Carolina, New-York, or Virginia, previous to that time, are classed as the productions of the Spanish Main and the West Indies, *re-exported*. We never doubted that cotton had been produced in Carolina very long anterior to that period, and so stated it, in a very elaborate history of the plant, in our number for April, 1846, vol. i. We also mentioned the fact that it was grown in Louisiana as early as 1760, being introduced from St Domingo, and that M. de Maurepas suggested the importation of machinery from the East Indies for the separation of its seed—(vol. i., p. 300.) It was cultivated in Alabama in 1772, and a machine used for cleaning it. The bags were suspended between two trees whilst being packed, and contained about 300 pounds—(vol xi., Review, p. 148.) The Mercury is, no doubt, right in stating, that small quantities of this cotton were *exported;* but it is difficult to determine how much of the

exports were of native growth, and how much were derived from West India commerce, &c. We believe the Charleston accounts do not show this: they might be examined to advantage on the point.

The following is the extract from the Mercury, to which we append a further reference to the subject by a Cotton Planter:

"'THE FIRST BALE OF COTTON.'

"In the last number of De Bow's Review, in an elaborate article on the Cotton Culture, it is stated, as a matter beyond dispute, that 'not a single bale of this country's growth was exported previous to 1787.' This statement was made long ago—it has been corrected; but, somehow, the correction seems never to have overtaken the error, and it has a great chance of becoming history by dint of repetition. The precise date of the introduction of cotton into Carolina we have no means of fixing; but it is certain that it was exported from Charleston more than a century ago. In a publication entitled, 'A Description of South Carolina,' put forth in London in 1761, there is a minute statement of the exports of the products of the province from this port for the year ending the 1st November, 1748. In that list we find 'Cotton Wool, 7 bags, at £15, S. C. currency, per bag.' There may yet be discovered documents showing at what precise time, and by whose hand, the germ of this wonderful culture was first planted.

"It was certainly insignificant for a long time, and probably during the troubles of the Revolution nearly disappeared; but we have shown that its appearance, as an article of commerce, after the peace, was only the revival of a suspended branch of industry, humble enough at that time, but deeply interesting from its after history."

"'THE FIRST BALE OF COTTON.'

"Messrs. Editors: Under the above head you offered some remarks, and presented a fact, in your paper of the 15th instant, to controvert the position assumed in the last number of De Bow's Review, that 'not a single bale of this country's growth was exported previous to 1787.'

"On this interesting subject, I find the following information in Governor Seabrook's Memoir on the Cotton Plant, published a few years ago:

"'In a pamphlet of the date of 1666, entitled, 'A brief Description of the Province of Carolina, on the Coast of Florida,' the writer, in speaking of the Cape Fear Settlements, made only two years before, says—'They have Indigo, Tobacco, very good, and Cotton Wool.' Dr. Hewitt, in his historical account of South Carolina and Georgia, while commenting on the introduction of silk into the former, and the products of the earth, for which premiums ought then to have been given to those who should bring to market the greatest quantities of them, alludes particularly to cotton, and, after detailing the manner of planting it, remarks, that this article, 'though not of importance enough to have occupied the whole attention of the colonists, might, nevertheless, in conjunction with other staples, have been rendered profitable and useful.'

"In Wilson's account of the 'Province of Carolina, in America,' published in 1682, it is stated, that 'cotton, of the Cypress and Malta sort, grows well, and a good plenty of the seed is sent thither.' In Peter Purry's description of the Province of Carolina, drawn up in Charleston, in 1731, 'flax and cotton' are said to 'thrive admirably.' In the journal of Mrs. Pinckney, the mother of General Thomas and General Charles C. Pinckney, who, as Miss Lucas, when only eighteen years of age, was entrusted with the management of the planting interest of her father, the Governor of Antigua, is the following memorandum: 'July 1, 1739—wrote to my father to-day a very long letter on his plantation affairs—on the pains I had taken to bring the indigo, ginger, cotton, lucerne and casada to perfection, and that I had greater hopes from the indigo than any other.' 'June, 1741—wrote again to my father on the subject of indigo and cotton.'

"It is a well-authenticated fact that, in 1736, as far north as the 39th degree, cotton, 'on the garden scale,' was raised in the vicinity of Easton, in the county of Talbot, on the eastern shore of the Chesapeake Bay. About forty years afterwards it was cultivated in St. Mary's county, Maryland, and in the northern county of Cape May, in New-Jersey; also in the county of Sussex, in Delaware.

"Among the exports of 'Charles Town,' from November, 1747, to November, 1748, are included 7 bags of cotton wool, valued at £3 11s. 5d. per bag. In 1754 'some cotton' was again exported from South Carolina. In 1770 there were shipped to Liverpool three bales from New-York, four bales from Virginia and Maryland, and three barrels from North Carolina. Before the Revolutionary War, Virginia exported, *communibus annis*, hemp, flax-seed, and cotton, to the value of $8,000. In 1784, an American vessel that carried eight bags to Liverpool was seized, on the ground that so much cotton could not be produced in the United States. In 1785, 14 bags; in 1786, 6 bags; in 1787, 109 bags; in 1788, 389 bags; in 1789, 842 bags; and in 1790, 81 bags were received in Europe from this country. Of these, 153 bags were sent directly, and a portion of the remainder by the way of Philadelphia and New-York, from Charleston. The first bag of cotton sold in South Carolina, was purchased, in 1784, by John Teasdale, from Bryan Cape, then a factor in Charleston. The first bag of the wool exported from that city to Liverpool, arrived January 20, 1785, per Diana, and was consigned to Messrs. J. & J. Teasdale & Co.

"Governor Seabrook, in the pamphlet from which the above are extracts, after assigning very satisfactory reasons for his belief, that the seed of short staple cotton was originally introduced into this country from the Mediterranean, says: 'Peter Purry is represented to have brought with him, among other seeds, that of cotton. This and a paper of the same material, received by the Trustees for the Settlement of Georgia, from Philip Miller, of Chelsea, England, it can scarcely be questioned were from the Mediterranean. Mr. Wilson, already quoted, says expressly that the Carolina sort was from Cyprus and Malta. In a pamphlet entitled 'American Husbandry,' published in London in 1775, the writer remarks, that 'the cotton cultivated in our colonies is of the Turkey kind. On the other hand, it must be supposed, from the language of their historian, that the Cape Fear emigrants, who began the growing of the gossypium only two years after they had established their settlements, were provided with seed from Barbadoes.'

"In reference to Sea Island, or black seed cotton, the writer states, that it 'began to be raised in Georgia, in experimental quantities, in 1786. The native place of the seed is believed to be Persia. It is designated the Persian cotton by Bryan Edwards, and is so called in the West Indies, and by the merchants of England. The seed grown in this country came from the Bahama Islands, where it had been introduced, by the Board of Trade, from Anguilla, a small island in the Caribbean Sea, and was sent by Mr. Tatnall, then surveyor-general of the Bahamas, Colonel Reisell and others, to Governor Tatnall, James Spalding, Richard Leake, and Alexander Bisset, all of Georgia.'

"Want of time prevents me from furnishing other extracts.

"If A. E. Miller, the publisher, has any copies of the 'Memoir on the Cotton Plant' on hand, I recommend him to offer them to the public for sale.

"A Cotton Planter."

4.—FLAX COTTON.

We copy the annexed from the Plow, Loom and Anvil; but in regard to our planters being ruined by the competition of flax cotton, will add—*credat Judæus apella non ego.*

"The annexed notice of the progress of the arrangements for the production of flax cotton, taken from an account of the late New-York State Agricultural Fair, can scarcely fail to have interest for our readers of the planting states, and we desire to call to it their special attention. Southern policy has *driven* southern labor almost exclusively into agriculture, for it has looked to the separation of the spindle and the loom from the plow and the harrow, the consequence of which is, that all the cotton-spinning machinery of the world is now located in the flax-growing countries of the world, which latter are now engaged in a vigorous effort to throw off all dependence upon the producers of cotton; and that effort will be successful, and that at no distant period, if it be not at this moment. What, then, will be the condition of the planter? Even now he is almost ruined, when his crop reaches two and three quarter millions, and even the prospect, that such may be the size of the crop, has reduced the price to an average of little more than thirty dollars per bale; but, let the present movement be per-

fectly successful, and there will soon be added a million of bales of flax to take the place of as many bales of cotton, and then even twenty dollars a bale will be considered a high price. We entreat our southern friends to study well their prospects, and to determine for themselves, if their security against such movements will not be greatly increased by adopting the measures necessary for bringing the spindle and the loom to their own cotton fields, and thus making a market on the land for the products of the land.

"Nothing, however, arrested our attention in this hall but the specimens of flax-cotton and its various proportions, exhibited by E. G. Roberts, assignee of Claussen's patents for the United States. We saw one intelligent, influential citizen converted from skepticism to enthusiasm for flax-cotton by his first earnest examination. It *will* go inevitably. A cotton fibre scarcely distinguishable from Sea Island may be produced from flax by Claussen's process for six cents per pound; and a machine for breaking out the fibre from the unrotted stalk was exhibited by Mr. Clemmons, of Springfield, Massachusetts, which is calculated materially to expedite the flax-cotton revolution. This machine renders the entire fibre, with hardly a loss of two per cent., as 'swingle-tow,' straight, and wholly separated from the woody substance, or 'shives,' at a cost which can hardly equal one cent per pound of dressed flax. Its operation is very simple, and any man who has seen it work a day may manage it. Its entire cost is from $125 to $200, according to size. It will be a shame to American agricultural enterprise if flax-cotton and linen are not both among our country's extensive and important products within the next three years."

5.—THE ENORMOUS CROP OF COTTON.

The able commercial editor of the Charleston Mercury thus speculates upon the prospects of the cotton trade:

We hear the present crop of cotton so frequently described as enormous, that we hope we may be pardoned for indulging in a few statistics respecting it. We readily grant, that ten years ago 2,800,000 bales would have been an enormous crop, but we are very far from conceding that that quantity may now be regarded in the same light.

On the 31st of December, 1845, the stock of American cotton in Great Britain was 624,000 bales; since then we have produced (exclusive of the present crop) six crops, as follows:

1845–6	2,100,000	bales.
1846–7	1,778,000	"
1847–8	2,347,000	"
1848–9	2,728,000	"
1849–50	2,096,000	"
1850–51	2,355,000	"
Total	13,404,000	"

Amounting to the very large aggregate of 13,404,000 bales; yet, at the close of this period, viz: on the 31st of December, 1851, Great Britain held a stock of only 221,000 bales, or 100,000 bales less than on the 31st of December, 1845; and France, the rest of Europe, and New-England, were still more bare of stock. Yet, in the face of these well-known and striking facts, the present crop has been hurried to market, and sold with a precipitancy, that, low as prices have been, would evidently have led to still greater sacrifices, if the *enormous consumption* had not prevented it. The manufacturers, and indeed all the world, seemed to have more confidence in the value of cotton than the planters, and bought with an avidity that the activity of the panic-stricken planters to sell could hardly keep pace with; and what has been the result? The business season is nearly over; 2,511,000 bales out of the 2,800,000 or 2,850,000 bales—the supposed extent of the crop—have already been brought to market; the stocks in the interior towns (those of them that publish their stocks) are 70,000 bales less than at the same period last year; showing, in a very striking manner, how universal has been the policy of selling and forcing all the cotton down to the

seaports. When planters hold back a portion of their crops, it is for the most part held in these inland towns, under advances generally from factors or warehousemen; and it may therefore be justly inferred, that the condition of these stocks is a fair index of the condition of the country generally, as regards the quantity of cotton yet to come to market. But let us admit that there is as much as last year on the plantations; and that, including the towns, there are (notwithstanding the deficit of 75,000 bales) 340,000 bales yet to be received—only 30,000 bales less than was received last year in the same period; this quantity, added to the present receipts of 2,511,000 bales, would give a crop of 2,859,000 bales. With this crop, how will the world make out? We shall say nothing of the diminished supply that Great Britain will receive from India, (estimated at 100,000 bales,) but confine ourselves to American cotton only. How will Great Britain be sustained as compared with last year?

Up to the 16th inst. the receipts of the present crop in the seaports amounted to	2,511,000
Last year at the same date they were	1,983,000
Excess of receipts this year	528,000

But this excess, considered so enormous, has already been distributed and disposed of; for, instead of having a corresponding excess in the stocks in the seaports, it appears, on the contrary, that we have but 5,000 bales more stock than last year. In the distribution of cotton, of course Great Britain has got her share of the excess of 528,000 bales, and alarmists will naturally look to see to what extent the stock in Liverpool has swollen under this plethoric influence. Let us look at this:

1851, April 16th, exports to Great Britain		1,040,000
1850, " " "		846,000
Excess of supply over last year		194,000
Liverpool, March 26, (the latest date.)		
Import this year	336,000	
Import last year	300,000	
Excess of imports		36,000
Stock last year	332,000	
Stock this year	176,000	
Reduction in stock		156,000
Diminution in supply, as compared with last year		192,000

In other words, if we add to the stock which was held in Liverpool on the 26th of March the whole excess in the exports from this country down to the 16th of this month, they would then have a stock barely equal to that they held on the 26th of March, last year, viz:

Stock in Liverpool, March 26th, 1852		176,000
Excess of exports to Great Britain up to the 16th of April	194,000	
Leaves excess already received in Great Britain down to the 26th of March	36,000	158,000
		334,000
Stock 26th of March, 1851		332,000

It is thus demonstrated that all additional supply of cotton over last year that Great Britain shall receive from us this year, and put into stock, has yet to be exported from this country, and how any excess of magnitude can be sent, re-

mains to be seen. We have no more stock than last year, or but 5,000 bales more. If the crop do not exceed 2,850,000 bales, we shall have but 240,000 bales more to get—which is less than the supply at the corresponding period last year, by 26,000 bales, viz :

Stock this year	567,000	
Estimated receipts	340,000	
		907,000
Stock last year	561,000	
Receipts to 1st of Sept	372,000	
		933,000
		26,000

Out of this remaining supply, viz : 907,000 bales, with New-England, France, and all the manufacturing countries in Europe competing actively for an unusual share of the crop, how England can get more than she did last year out of 933,000 bales, when all her competitors had almost retired from the field, we cannot perceive. But let us admit that we do give her a further excess; that we send her, before the 1st of January, 1853, in addition to the present excess of 194,000 bales, a further excess over last year of 50,000 bales; this would give an additional supply above that of last year of 1,250 bales per week, for the forty weeks from the 20th of March up to the 1st of January; and how far this excess is likely to go into stock may be inferred from the fact, that the consumption up to the 26th of March (to say nothing of the increased exports) has been at the rate of 30,178 bales per week for the same period last year, and 23,350 bales per week as the average of the whole year. But at all events, it is clearly seen, that Great Britain commenced the year with a stock of only 251,000 bales; that including the entire excess of exports up to the present day, she cannot have made any addition whatever to that stock; that it is highly improbable that our future exports, to the end of this year, will exceed those of last by more than 50,900 bales; and, consequently, if she do no more than consume from the 26th of March to the 31st of December, 1852, the same quantity of cotton that she did during the same period in 1851, she can add to the above stock, at the end of the year, but 50,000 bales.

The planters could not be in a better position to command an advance in price upon the remainder of the present and the whole of the ensuing crop; and it really appears marvelous to us that they should evince such a groundless eagerness to sell at the present low prices.

6.—THE COTTON TRADE—THE INDUSTRIAL INTERESTS OF THE SOUTH.

To evince our entire impartiality, we copy from the Washington Republic the following paper. It always helps us to hear both sides fairly presented :

The causes, character and extent of the dictation exercised by England over the cotton trade of this country are strongly misapprehended by many of our southern planters; or, if understood, are regarded with most unaccountable apathy. England must purchase a certain portion of the cotton crop. Her agents in this country watch with keen eyes the annual growth of the crop, and through their correspondents in the different localities, ascertain the probable amount of production and of home consumption; and by deducting the latter from the former quantity, they arrive at a knowledge of the surplus for exportation. This amount, ordinarily, governs the price abroad. If this surplus exceeds the amount required by the British manufacturers and the Liverpool speculators, the price is fixed by them at a low figure, and *vice versa*.

The surplus of the crop of 1847–48 amounted to 1,741,000 bales, which, at an average of 7¼ cents, realized $65,000,000. That of 1848–49, was 2,103,000 bales; at an average of 6½ cents, realized $68,000,000. That of 1849–50 was 1,501,000 bales, realizing $82,500,000.

Thus it is seen that 1,501,000 bales, surplus crop of 1849–50, brought more than 2,103,000, surplus of 1848–49, by $14,500, estimating the bales at 500 pounds each.

Mr. Carey, in one of his excellent articles on this subject, says:

"How entirely the price is dependent upon the quantity to be exported, and upon the amount of power granted to the British manufacturer over the crop, may be seen from the following facts:

"When the surplus for which a market was to be sought abroad was

Under 1,100,000 bales, the price was 14 cents.
" 1,400,000 " " 10 "
" 1,700,000 " " 8 "
" 1,800,000 " " 7½ "

And when it exceeded 2,000,000 bales, the price fell to 6 cents."

The crop of 1851–52 is estimated by Mr. De Bow at 2,550,000 bales. Estimating the domestic consumption as in 1850–51 at 464,000 bales, it remains to be seen how much this surplus will put into the pockets of the planters.

The planter, then, has a direct and important interest in the increase of the domestic consumption of this staple. But, under the tariff of 1846, it has been constantly decreasing, and will continue to decrease to the end of its last impoverishing chapter. The decrease in the home consumption of the crop, from '48–49 to '49–50, was 3,000 bales; from '49–50 to '50–51, 131,005 bales, leaving the consumption of the last period about the same as in '45–46—having gone back a period of some five or six years; whereas the consumption should have been 1,000,000 of bales, and would have been, under the operation of the tariff of 1842. Under that tariff, in '43–44, it was 346,000 bales; in 1844–45, it was 340,000; in '45–46, 452,000; in '46–47, (before the tariff had a chance to exert its baneful influence,) 468,000. Deducting 1,000,000 bales for home use, 2,550,000, the whole crop, we should have for export 1,550,000 bales only; whereas, in fact, we have a surplus of 2,082,000 bales to sell abroad. Who does not see, then, that the planter would obtain, on an exportation of 1,550,000 bales, 11 cents per pound? whereas, on an exportation of 2,082,000 bales he will probably obtain an average of 7 cents per pound.

The Southern planters need not look far from home to see that the consumption of cotton is annually declining. In 1848–49 the South worked up 110,000 bales—in 1849–50, 107,000—and 1850–51, but 60,000 bales. Well, they commenced their manufacturing operations in 1842, under the tariff of that year, and with that tariff, had it remained intact, by this time the South would have driven both British and Northern *coarse* fabrics from the market. It can put up factories by the side of its cotton fields, thereby saving all the expense of transportation, wharfage, drayage, commissions, insurance, &c., on the raw article, with all which it goes charged to the Old England and to New-England manufacturers. The North being unable, under these circumstances, to compete with the South in the manufacture of coarse articles, would have turned its attention to making the finer qualities of goods, and thus both the South and the North would have moved on prosperously and with true harmony of interests. Instead of this, cotton factories, both South and North, are closed, or are closing or working short time, consuming only a paltry 450,000 bales of cotton per annum, when they should and ought to have been able by this time to consume one million of bales.

How long will the Southern planters continue to seek some new and untried method to better their condition, in preference to that which is so obviously before them? They held, not long since, a convention at Macon to effect this. It ended in something much like smoke. Another convention is to be held in May next, having in view the same object. We predict nothing practicable will grow out of it, unless, profiting by bitter experience, they resolve that the restoration of the tariff of 1842, with some amendments, perhaps, is what is needed to enable the South, in a comparatively short period, to supply the mar-

kets of the world with coarse cotton fabrics. Such a restoration, followed by the erection of factories commensurate with their ability, would soon emancipate the cotton-growers from the thraldom of British dictation. Without protection they will in vain continue to struggle against the competition which now bears them down. Conventions and central committees, with all the missives and suggestions that may emanate from either, will prove of no avail, unless accompanied by measures that will promote the development of home manufactures.

7.—AN IMPROVEMENT IN MAKING SUGAR.

Our readers will remember that some eighteen months ago we gave an account of a new method for clarifying sugar, introduced to the public here at the time mentioned, after being successfully tried in the West India Islands, and principally in Cuba. The invention, we believe, is of English origin. The principle was that of the results of rapid centrifugal motion, applied to a fluid substance in a revolving cylinder.

The machinery was simple enough, took up but little room, and required a very small expenditure of steam and fuel. It consisted of a stout iron cylinder, some three feet in diameter, eighteen inches or two feet deep, and stationary. Within revolved on the same flat circular bottom plate, moved on a pivot by a belt and shaft combination acted upon by steam, three cylinders or sides, very close together, two of fine wire work, and one of sheet iron or zinc—we forget which—punched full of diminutive holes.

A charge of coarse common sugar and syrup, brought to the consistency of a thick paste, and weighing say one hundred and eighty-five pounds of sugar to fifteen of syrup, was placed on the bottom plate. This, and the wire cylinders firmly attached to it, and which were open at the top, were set in very rapid motion by the steam—being run as high as two thousand revolutions a minute—the syrup, to which was now added some clear water, flew out of the whirling interior cylinders, through the minute interstices of the wire work and punctured zinc side into the empty space bounded by the outward and stationary cylinder; the sugar banked up several inches deep against the inner zinc plate, but could not go through; and when the machine was stopped, in six or eight minutes, the syrup and water was found to have run off through a tube into buckets placed to receive it, and was ready for use again in another charge; whilst the sugar in the cylinder was taken out perfectly clean and dry, brought from a deep molasses color to a pure glittering straw tint, the crystals perfect, and the clarified article worth in the market from eight to ten cents per pound, while the original article cost three and a-half and four cents.

Everybody who saw the experiments made daily here for a month or so with one of these centrifugal clarifying machines, was astonished and delighted with the rapidity of its operation, its facility and certainty. But, in this machine, and in several which were put up in a refinery at Lafayette, the great objection was found that they were continually getting out of order. The whirling motion communicated to the interior cylinder was so very rapid, that there was not only danger of its flying to pieces suddenly, but there was an actual experience to prove the great wear and tear of the pivot, bands, &c.

Finally, the whole thing was given up here in disgust, and the "centrifugal machine" was pronounced a humbug.

It so happened that four months since, Mr. Janin, the proprietor of that very large and extensive sugar refinery erected near the Battle Ground, below the city, was called to the Island of Cuba—ill-health, we believe, forcing him to leave here for a time. He found, at several large plantations on the island, the "centrifugal clarifier" in successful and every-day use, working with perfect safety and ease, and greatly to the advantage of sugar makers. Mr. Janin hastened back here, bought up all the "centrifugal cylinders" he could find—even the very machines which had been thrown aside in this city as good for nothing—and for the last two months they have been in operation at his refinery, working as regularly, smoothly and safely as could be desired.

Besides these seven old machines at the refinery, there are two new ones, made by the inventor expressly for plantation use. They are worked by a dimi-

nutive vibrating engine of about three horse-power, with the motion applied directly to the interior cylinders. The waste steam at the refinery suffices to work this engine, the power of whose direct action on the centrifugal machine is very simply and easily controlled. All the machines at the refinery are run at the rate of about twelve hundred revolutions a minute. The charge of sugar and syrup in each machine is two hundred pounds—one hundred and eighty-five of sugar. In six minutes the charge is clarified. By the old and expensive process it would take about thirty days. The average cost on the levee of the sugar used for these machines is two and eleven sixteenth cents. The average price of the clarified article is four and seven-eighth cents. The two improved plantation machines—either of which, we forgot to state, can be worked while the remaining one is stationary and being cleaned out—can clarify easily thirty-two hogsheads of sugar every twenty-four hours. The loss at the refinery, on the charge of two hundred pounds, is about fourteen per cent; but on a plantation, this would not be experienced, as the charge, in the state of paste required, could be taken immediately from the cooling vats.

The improved machine is, indeed, admirably adapted to plantations. It will effect a thorough revolution in the process of sugar making, dispensing with the costly apparatus of vacuum pans, &c., saving time, labor and money to a vast extent. All our statements in regard to the matter are made from the well-tried experience of daily renewal, of a thorough machinist and sugar maker in charge of the works of the Battle Ground Refinery.

8.—PRODUCTION OF SUGAR IN LOUISIANA, 1851–'52.

NAMES OF PARISHES.	No. of sugar-houses.	No. by steam-power.	No. by horse-power.	No. of hhds. sugar.
1. Rapides	46	34	12	10,127
2. Avoyelles	30	15	15	3,398
3. West Feliciana	20	18	2	5,894
4. Point Coupee	65	58	7	7,187
5. East Feliciana	14	14	—	1,645
6. West Baton Rouge	57	48	9	10,842
7. East Baton Rouge	53	43	10	7,076
8. Iberville	133	111	22	15,835
9. Ascension	62	52	10	14,034
10. St. James	85	70	15	17,719
11. St. John the Baptist	67	47	20	10,920
12. St. Charles	38	37	1	9,629
13. Jefferson	29	29	—	7,775
14. Orleans and St. Bernard	25	25	—	5,773
15. Plaquemines	45	45	—	12,345
16. Assumption—Bayou Lafourche	146	51	95	18,001
17. Lafourche Interior, do.	76	46	30	11,681
18. Terrebonne, do.	91	51	40	13,498
19. St. Mary—Attakapas	188	62	126	27,379
20. St. Martin, do	95	17	78	6,052
21. Vermillion—Lafayette	22	2	20	730
22. Layfayette	19	2	17	783
23. St. Landry—Opelousas	68	36	32	4,420
Divers small parcels, made in hogsheads and barrels, in different sugar-houses, not reckoned				3,600
Cistern bottoms of 203,922 hogsheads brown sugar, at an estimate, say of five per cent				10,204
Total	1474	914	560	236,547

Estimated at....257,138,000 lbs.

Brown sugar made by the old process....203,922 hhds.
Refined, clarified, &c., including cistern.... 32,625 "

Total....236,547 "

The above statistics are from the valuable annual report of Mr. Champomier upon the crop. Forty-three plantations in the state are worked on the various new pro-

cesses and vacuum principle. Quality of the crop generally indifferent, the season being bad. Deficiency of rains throughout the state. There are 1,474 sugar plantations in Louisiana, 914 being worked by steam and 560 by horse-power. The molasses crop unusually large, averaging this year 70 gallons to the 1,000 lbs. sugar; the crevasses on the Mississippi, Lafourche and Plaquemines destroyed 9,000 or 10,000 hhds.

The refineries of Louisiana worked up the following:

Louisiana Steam Refinery, 1,467,905 lbs. Louisiana sugar, 52,872 lbs. cistern sugar, 538 boxes Cuba sugar. Battle-ground Refinery, besides the crop of the plantation, (550,000 lbs.) 3,214,767 lbs. sugar, 537,222 lbs. cisterns, 211 boxes Cuba. Lafayette Refinery, 81,765 lbs. sugar, 2,735,114 lbs. cisterns. Valcour Aime's Refinery, besides the crop of 678,000 lbs., 1,859,437 lbs. sugar, 1,004,093 lbs. cisterns, 800,986 lbs. Cuba. The Louisiana Refinery also worked up 2,809 gallons Louisiana molasses, and 249,629 gallons Cuba; the Battle-ground, 94,554 Louisiana, and 179,260 Cuba; the Lafayette, 7,047 gallons Cuba; and the Valcour Aime 88,555 gallons Cuba Molasses.

Sugars received in the West from Louisiana.

			1847.	1848.	1849.	1850.	1851.
St. Louis	hhds. sugar		12,671	21,823	25,817	25,580	28,522
"	bbls. and boxes		9,114	10,033	10,079	23,460	38,768
Cincinnati	hhds. sugar		16,649	27,153	22,685	26,760	29,803
"	bbls. and boxes		12,313	14,103	9,422	15,472	22,196
Pittsburgh	hhds. sugar	supposed	..	..	..	6,000	7,000
Wheeling, Va.	hhds.	"	..	..	..	2,500	2,400
Portsmouth, Ohio	"	"	..	..	..	1,600	2,000
Maysville and Augusta, Ky.	"	"	..	..	..	1,500	2,200
Madison, Ia.	"	"	..	..	..	1,000	1,300
Louisville, Ky.	"	"	..	..	..	14,000	15,000
New-Albany, Ia.	"	"	..	..	..	..	2,000
Evansville and Wabash, Ia.	"	"	..	..	..	3,500	5,000
Cumberland River	"	"	..	..	..	5,000	5,700
Tennessee River	"	"	..	..	..	2,000	2,200
Mills's Point	"	"	..	..	..	1,000	1,100
Memphis	"	"	..	..	..	6,000	7,000
Steubenville and Wellsville, O.	"	"	..	..	..	800	1,000
Wellsburg and Parkersburg, Va.	"	"	..	..	..	400	500
Marietta and Gallipolis, Ohio	"	"	..	..	..	500	600
Pt. Pleasant and Guyandott, O.	"	"	..	..	..	400	500
Lawrenceb'g, Aurora & Vevay, Ia.	"	"	..	..	..	500	600
Warsaw, Henderson and Owensburg, Kentucky	"	"	..	..	..	900	1,000
Jeffersonville	"	"	..	..	..	400	500
Mt. Vernon & Shawneetown, Ia.	"	"	..	..	..	500	700
Many small buildings on the Ohio, at least 30 in number, say	"	"	..	..	..	1,500	1,700
On the Mississippi, above Memphis, about twelve or more small landings, say	"	"	..	..	..	250	300
Sundry parcels purchased by flatboatmen, traders, &c., say	"	"	..	..	..	5,000	6,000
Exclusive of the states of Arkansas, Mississippi, Louisiana, & part of Texas, via R. River	"	"	..	..	..	..	..

COMMERCIAL DEPARTMENT.

1.—WHAT WILL BE THE RESULT OF THE ENORMOUSLY INCREASED PRODUCT OF GOLD UPON PRICES AND GENERAL PROSPERITY?

The news recently received from California and Australia is of the most astounding character. If one half of the accounts we get from these countries is true, we must look for a wonderful revolution in all the financial and commercial systems of the world. It appears, by a report lately issued from the Treasury Department, that from 1482 to 1803, the product of the gold and silver mines of

the world amounted to five thousand four hundred millions of dollars, being an average of about seventeen and a half millions per annum. From 1803 to 1852 the average annual product is estimated to have been sixty millions of dollars. Previous to 1803, the annual increase in the supply of bullion was too small to affect the currency very materially, or to affect prices to any extent: for the amount annually added to the circulating medium of the world at the time was considerably less than the annual product of the mines, allowances for the manufacture of precious metals into articles of luxury and necessary use being required, to arrive at a correct result. Since 1803 the annual supply of bullion from the gold and silver mines of the world has been comparatively large, being more than three times the previous average. This has had a greater influence upon prices. At the close of 1851, it was estimated that up to that date the aggregate yield of the gold and silver mines of the world had been nine thousand millions of dollars. The effect on prices of this rapid accumulation of bullion has commenced, as is shown in the annexed table, taken from returns of the Bank of England, and official reports of prices for wheat in Great Britain:—

Circulation and Bullion of the Bank of England.—Prices for Wheat per Quarter.

	Price of Wheat.	Bullion in Bank.	Circulation of Bank.
1765	£1 19 1	—	—
1775	2 11 3	£2,010,690	£7,440,330
1785	2 7 8	2,740,820	5,923,090
1795	2 14 3	6,127,720	14,017,510
1805	4 1 2	5,883,800	17,874,170
1815	4 17 6	2,036,910	27,261,650
1825	3 18 3	8,779,100	20,753,760
1835	3 1 6	7,154,000	18,319,000
1845	2 17 3	15,592,292	21,049,645
1852	2 4 8	19,682,930	19,980,020

It is impossible to give in a table a proper comparative statement of the fluctuations and variations in prices, or the financial movements which affect them. There are numerous causes that more or less affect prices; but it will be seen by the above table that prices have expanded as the bullion in the bank and notes in circulation increased. The changes in the commercial system of Great Britain which have been made within the period named in this table, have, no doubt, had an important influence on prices. The modification of the corn laws had a wonderful effect, and the seasons are great regulators of the market value of breadstuffs. The value of the currency is, however, one of the most powerful influences brought to bear upon prices for every species of property.

An addition of sixty millions of dollars annually to the stock of gold and silver bullion of the world was hardly large enough to affect the value of property generally. Probably not more than one half of that amount was added to the metallic currency of all countries, the rest having been required for the arts, for luxury, &c. This, compared with the enormous amount of fixed and floating property it would have to influence to affect prices, was too insignificant to have been visible in any market.

At times the financial and commercial world has been convulsed for the want of a sufficient supply of metallic currency. Revulsions have been the result of too great an expansion of the paper currency, required during periods of speculation to supply the demand for a circulating medium. The rapidity and extent to which paper representatives of gold and silver can be increased, and the effect of this paper expansion on prices of every species of property, has been at times most disastrous. Having no real basis, and having been provided to meet the artificial wants of a community during the highest state of speculative excitement, it could not be sustained, and the result in every instance has been the same. We are now about entering upon a new era in finance, and an extraordinary state of things altogether. What the consequence will be, no one can at this moment determine. The production of the old and new gold and silver mines of the world, from this time forth, is likely to be very large. Before the discovery

of the gold mines in Australia, and before the mines of California had been properly worked, the annual product of precious metals was about sixty millions of dollars. Australia will, it is estimated, yield this year nearly eighty millions of dollars; California about the same amount; Russia, Africa, Mexico, South America, and other parts of the world, about forty millions; making in round numbers an aggregate of two hundred millions of dollars as the production of gold and silver for the year 1852. While this enormous accession to the supply of precious metals is going on, we have hundreds of paper manufacturing machines, located in all parts of this country and Europe, actively engaged in turning out promises to pay on demand in immense quantities. Banks are starting up in almost every town and village in the Union. The old mills are hard at work, and the new ones will not suffer their machinery to remain idle. It is our impression that during the present year the paper currency of the world will be augmented at least fifty millions of dollars. This, added to the augmentation of precious metals, will give us an addition to the metallic and paper currency in one year, of two hundred and fifty millions of dollars. In contemplating this enormous increase in the representative of wealth, we are lost in wonder and astonishment. We may not for a year or two feel any evil effect of this great annual supply. Prices of property may not be permanently inflated, or the inflation may be so gradual as to have no visible influence, for a considerable time, upon financial and commercial affairs. It must be borne in mind that Australia and California are located in comparatively a new world. We must not lose sight of the fact, that in those countries bordering on the Pacific Ocean, there is a population of five hundred millions of souls, who have been in a dormant state, who have never before had such a field open before them for the extension of their commerce. The capital required to give activity to all the elements of trade such an enormous population is likely to call forth, will absorb all the product of the mines of that section of the world for some time at least. Ultimately, unless something happens to arrest the supply of bullion, there must be a plethora, and then we may look for all those changes which a depreciation in the standard of value is sure to bring about. The effect of such an annual product of gold as we anticipate, will at first be most favorable. It will give activity to every department of industry; it will cover every sea with steamships and clipper ships; it will cover the land with every improvement for communication and transportation; it will build up and extend our cities to their utmost limits; it will put in motion the population of the universal world; it will extend civilization and republicanism, by bringing the people of all nations in contact with each other; it will give an impetus to every description of enterprise that the mind of man can conceive; it will develop the resources of the land and of the sea; it will not only cultivate and adorn the surface of the earth, but it will dive deep into its bowels, and drag forth its mineral wealth; it will do all these, and much more; and when there are no more improvements to make; no more room for the extension of commerce—no more worlds to conquer; when the inhabitants of the globe are brought together as one people, in the most intimate intercourse, commercially, financially, and socially—we may then look for an accumulation of capital; of a surplus supply of that representative of wealth which for ages past has been the recognized standard of value. Then we may look for a derangement in the systems which now regulate the commerce of all nations, for an alteration in values which will revolutionize the existing state of things, and lay the foundation of new principles for the government of the world. An enormous expansion, an immense speculation, an increase in the value of property nominally, must follow, which will put out of joint all present ideas of finance. The relative position of property will be changed—public securities will appreciate and depreciate according to the sources of income. It is, however, to be hoped, that we may slide into the new order of things so gradually as to be hardly perceptible to those engaged in the commercial and financial operations of the day.

2.—COFFEE TRADE OF THE UNITED STATES, 1851-'2.

We published an elaborate history of coffee and the coffee trade in vol. ii. of the Review, and have since added many annual statistics under the New-Orleans head. We add the following from the New-York Shipping-List:

Received.	Total Packages. 1851.	1850.	Stock, Jan. 1. 1852.	1851.	Exported. 1851.	1850.	Value 1st January. 1852.	1851.
AT NEW-YORK.								
From foreign ports	522686	321112	93500	16000	22708	45711		
AT BOSTON.								
St. Domingo	71,969						8 a 8½	10½ a 10¾
Java	61,014						10½ a 11½	11½ a 12¾
Brazil	13,343						7¾ a 8¼	11 a 12
Other foreign	13,247						—	—
	159573	125881	32000	6000	22908	28336		
AT PHILADELPHIA.								
Laguayra	32,168						8 a 9½	9½ a 11¾
Brazil	76,043						8 a 9	10¼ a 11½
Other foreign	15,043						—	—
	123254	100261	18500	none	6063	6088		
AT BALTIMORE.								
Brazil	266,240						8¼ a 9½	— a 10¾
Laguayra, &c.	21,081						8¼ a 9	10¾ a 10½
Other foreign	17,872							
	305183	184630	28000	26000	2945	6778		
AT NEW-ORLEANS.								
Brazil	335,096						7¾ a 8¼	10¼ a 10¾
Cuba, &c.	7,672						—	9½ a 9¾
	342768	295397	92600	31000	71	4006		
At other ports	40368	27295	8100	4185	—	—		
Total	1503040	1054576	272700	83185	55785	91119		

	Bags.
Total packages received in 1851	585,017
Add stock, Jan. 1, 1851	16,000
Total supply	601,017
Deduct export	23,708
Add stock, Jan. 1, 1852	93,500—117,208
Taken from this port for consumption in 1851	483,809
Or about 66,714,430 lbs.	
Total packages received in 1850	382,986
Add stock, January 1, 1850	36,000
Total supply	418,986
Deduct export	45,711
Add stock, Jan. 1, 1851	16,000— 61,711
Taken from this port for consumption in 1850	357,275
Or about 49,589,400 lbs.	

	Pkgs.
Receipts in the United States in 1850	1,503,040
Add stock, 1st Jan., 1850	83,185
Total supply	1,586,225
Deduct exports in 1851	55,785
Add stock, 1st Jan., 1852	272,700— 328,485
Taken for consumption in 1851	1,257,740
Or about 184,721,460 lbs.	
Receipts in United States in 1850	1,054,576
Add stock, 1st Jan, 1850	101,900
Total supply	1,156,476
Deduct exports in 1850	91,119
Add stock, 1st Jan., 1851	83,185— 174,304
Taken for consumption in 1850	982,172
Or about 134,589,736 lbs.	

Import at New-York, from foreign and coastwise ports:

	Foreign and Coastwise Ports.	Exports.	Stock, Dec. 31.
1850 bags	382,986	45,711	16,000
1849	401,075	49,060	36,000
1848	418,003	31,594	24,000
1847	427,470	18,116	21,000

NOTE.—The estimated consumption of the country for 1851, it will be seen, is about equal to 36½ p. cent. over that of 1850—but it will be remembered that the importation of 1850 was much smaller than that of several previous years; that prices in 1850 ruled high, and the consumption was in a great degree limited, substitutes being used to a considerable extent, and at the close of that year the stock held by dealers was nearly exhausted. The stock at the present in dealers hands, throughout the country, is generally estimated to be above the average.

RECAPITULATION.

CONSUMPTION ESTIMATES.

Taken from New-York lbs.	59,363,030
" " Baltimore	46,449,470
" " New-Orleans	45,128,960
" " Philadelphia	14,031,560
" " Boston	12,684,340
" " Other Ports	7,064,160
Total	184,721,460

In the above estimate of consumption, we have not included the coastwise receipts at the ports, they being already embraced in the calculation at the port where they were originally received.

STOCK, 1st JANUARY, 1852.

At New-York, of Brazil bags	43,000
" Java pockets, &c.	27,500
" Laguayra and Maracaibo bags	18,000
" Other kinds pkgs.	5,000
Total at New-York pkgs.	93,500
New-Orleans—Brazil	92,600
Baltimore—Brazil	28,000
Philadelphia—(mostly) Brazil	18,500
Boston—(mostly) Java, in pockets	32,000
Other Ports—(mostly) Brazil	8,100
Total pkgs.	272,700

3.—TOBACCO TRADE OF ST. LOUIS.

This article, justly estimated as one of the most important and valuable productions of the West, has, within comparatively a few years past, become one of the chief sources of the agricultural wealth to our state. The rude and careless mode of its culture, and the rough and unmerchantable style of its preparation, for both domestic and foreign markets—arising alike from the ignorance of the planter of the adaptability of the soil to its growth, and the necessary precautions required for security and protection from the sudden changes of climate as well as the lack of the experience and proper facilities requisite for its safe preparation and transportation to market, have been greatly improved.

This may be attributed chiefly to the emigration to our state of practical planters from the older tobacco-growing states of Virginia, Kentucky and Tennessee, and the introduction of the agents and capital of regular eastern dealers, who, in conducting their operations, have stipulated with the planter from year to year, in making their purchases by contract, for the delivery of the article, in improved order and condition, with attention to its assortment as to color, quality, and length, consequently enhancing its value to the purchaser, and adding much to the returns of the producer, as the fruits of his labor. Owing, in a great measure, to these improvements, as well as to the fact of the actual improvement in the quality of the tobacco, arising from the repeated succession of crops upon the same land, tending to deprive the soil of much of that strength which caused a too rapid and luxuriant growth of the plant, rendering it coarse in texture and bitter in taste, may be attributed the removal of that prejudice which has attached to the Missouri tobacco, in former years, and the acquisition of a better reputation, in its variety of qualities, suitable alike for stemming, manufacturing, and smoking.

To the experienced dealer and judge of the article, it is no assumption to state, that Missouri tobacco, in its distinct quality of manufacturing, is superior to the production of any other state, save Virginia, and that the day is not far distant when it will even rank, side by side, with the deservedly reputed growth of her soil. As an evidence of this fact, the tobacco manufacturers of Ohio and Kentucky, and indeed all situated on the Ohio River, as far distant as Pittsburgh, seek their supplies of the raw material, in person, or by order, from the crops of our state, and thus become competitors of our own manufacturers, in their selections at the daily market in St. Louis.

There have also been shipments, to some extent, of this quality of tobacco, to Virginia direct, to supply, in part, the deficiency existing in the manufacturing grades of their own short and inferior crop of last season—which were better appreciated than the shipments hence in former seasons.

As a shipping article, it is only necessary to refer to the foreign reports and classification of what is termed "Western Tobacco," in the London and Liverpool markets, to ascertain that Missouri tobacco is fast vieing with the quality and reputation of Kentucky tobacco—a tobacco, which stands higher in character, for the various purposes to which it is appropriated in foreign countries, than any other raised on our continent.

The average production of tobacco in the state, for a period embracing the past five years, has been 10,800 hhds., and during that time it has neither materially increased or decreased upon the crops of former years. The chief causes which have operated to prevent an increased production, have been the withdrawal of valuable labor from the crops by the "California emigration," which has been principally amongst that class of our population, in the interior, who had cultivated the article extensively, and the diversion of much of the remaining labor bestowed on this crop, to the more profitable cultivation of hemp, upon the same lands before appropriated to the raising of tobacco, which the experience of farmers taught them, had admirably adapted them to its cultivation.

The territory best suited to the cultivation of tobacco in the state, and to which its production is mainly confined, is embraced in the counties of Chariton, Howard, Franklin, Calloway, Lincoln, Randolph, Pike, Macon and Monroe.

The following carefully prepared table will show the annual receipts of tobacco, in hogsheads, at the port of St. Louis, for the past five years, as well as the different descriptions shipped each year from all the important points on the Missouri and Mississippi rivers:

The annual receipts of Tobacco, in hogsheads, at the port of St. Louis, for the past five years:

	1847.				1848.				1849.			
FROM	*Whole shipment.*	*Strips.*	*Leaf.*	*Lugs.*	*Whole shipment.*	*Strips.*	*Leaf.*	*Lugs.*	*Whole shipment.*	*Strips.*	*Leaf.*	*Lugs*
Camden	534..	329..	80..	125..	435..	50..	310..	75..	378..	200..	124..	54
Brunswick	913..	455..	290..	168..	1395..	650..	415..	260..	946..	645..	80..	221
Kytesville	399..	320..	—..	79..	617..	360..	90..	167..	411..	295..	—..	116
Glasgow	5807..	1182..	3615..	1070..	4784..	914..	2903..	967..	5230..	1280..	3006..	944
Rocheport*	425..	215..	97..	113..	382..	161..	132..	89..	373..	196..	86..	95
Providence	48..	—..	32..	16..	128..	—..	85..	43..	301..	—..	193..	108
Portland	442..	—..	332..	110..	345..	—..	259..	86..	639..	2..	451..	186
Hannibal	850..	315..	300..	235..	800..	320..	290..	190..	900..	390..	310..	200
Other points.†	1537..	—..	1025..	512..	228..	—..	152..	76..	3668..	—..	2445..	1223
	11015..	2816..	5771..	2428..	9044..	2455..	4636..	1953..	12846..	3004..	6695..	3147

	1850.				1851.			
FROM	*Whole shipment.*	*Strips.*	*Leaf.*	*Lugs.*	*Whole shipment.*	*Strips.*	*Leaf.*	*Lugs.*	*Stems.*
Camden	262	195	35	32	284	196	34	54	20
Brunswick	827	560	100	167	1016	438	290	288	..
Kytesville	572	413	..	159	231	132	27	72	..
Glasgow	4316	1010	2514	792	3264	1600	1010	654	..
Rocheport*	450	242	87	121	326	174	65	87	..
Providence	80	30	19	31	184	50	93	41	..
Portland	428	—	286	142	546	—	330	216	..
Hannibal	550	210	225	115	1000	375	310	190	125
Other p'ts†	1731	—	1154	577	4187	—	2792	1395	..
	9216	2660	4420	2136	11038	2965	4941	3007	145

Tobacco inspection in St Louis for the past five years:

	1847.	1848.	1849.	1850.	1851.
Planters' Warehouse	3,854	3,184	4,982	4,186	4,247
State Warehouse	1,235	1,083	867	62	851
	5,089	4,267	5,849	4,248	5,098

By reference to the annexed table, it will be seen that the average proportion of strips, annually for the past five years, has been 2,800 hogsheads, worth at an average price, on board steamboat, of $8 per 100 lbs., for same time, $291,200. Of leaf, there has been an average of 5,300 hogsheads, at an average price of $4 50 per 100 lbs., worth $330,900. Of lugs, there has been an annual average of 2,500 hhds., worth $2 25, average price, $84,375—or the whole average crop, strips, leaf, and lugs, may be estimated as worth annually $709,475.

The manufacture of tobacco, previous to the year 1847, in this state, was but in its infancy, there being but six or seven factories in the state engaged in this department of the business, two of them located in this city and four in the town of Glasgow. Since this date, there has been a regular gradual increase throughout the state, till within the last year, when the quantity manufactured has been nearly three-fold that of any previous year; particularly has this been the case in St. Louis, as will be shown by the annexed table.

Owing to the increase in the manufacture of this article in the state, from the daily improvement in the facilities for the purpose, and the consequent low prices at which it could be afforded to the trade, there has been an almost entire exclusion, during the past year, of Virginia, and other foreign tobacco, which had heretofore chiefly supplied our market. From the low price at which the raw material has already opened the present season, with the extensive preparations made for its manufacture in this city and throughout the state, we may argue a continued exclusion of foreign tobacco from our market, and a trade at home for a large portion of the yield of our manufactories, at remunerating prices. Thus, the tribute paid for the transportation upon our own cultivation, to distant points without the

* Supposed to be.

† Other points—Richland, Cambridge, Lexington, Weston, Bluffport, Franklin, Herman, Washington, Nashville, Cote Sans Desseines, Brown's Landing, &c.

state, and the additional tax for its manufacture and return to our market for sale, as well as the profit paid to the producer and manufacturer of the article, in other states, will henceforth be saved to us, and enter, as a valuable item, into the sources of our wealth.

Number of boxes of manufactured Tobacco in the state, for the past five years :

	1847.	1848.	1849.	1850.	1851.				
St. Louis	1,850	2,000	2,386	3,974	8,335	Bxs.	av.	wt.	130 lbs.
Glasgow	3,682	4,834	4,047	4,316	5,218	"	"	"	135 lbs.
Other points	127	378	634	475	1,612	"	"	"	130 lbs.
	5,659	7,212	7,067	8,765	15,165				

At an average of seven boxes to the hogshead, the manufacture of 1851 consumed 2,166 hogsheads of tobacco; and at an average of $15 per box, or 13 cents per lb., the 15,165 boxes manufactured in 1851, are worth $227,425. Deducting the manufacture of 1851, say 2,166 hogsheads, from the receipts of that year, and we have 8,872 hogsheads as the quantity exported.

INTERNAL IMPROVEMENTS.

1. FLORIDA.—A company has been organized of influential Georgians, and New-York and Washington capitalists, for the construction of a rail-road across the upper portion of the peninsula of Florida from the port of Brunswick, in Georgia, to the city of Pensacola. A charter was some years ago granted to Brunswick for a canal to the Altamaha River, which has been bought up by a New-York company, together with a large part of Brunswick, and the canal, it is thought, will be opened by the first of January next. No better port than that of Brunswick can be found in all the southern Atlantic coasts, and vessels of every size may at all times reach its wharves. The character of the other terminus for the proposed rail-road, Pensacola, as a harbor, is universally understood, and the total length (exclusive of proposed branches to Tallahassee and Albany, on the Flint River) will be 200 miles—cost, $1,500,000. The work will be completed in five years. Says the Georgia Telegraph :—

"Let a connection of the rail-roads of Georgia with the Gulf be made, and the whole southern country will not only be placed in closer proximity to the West Indies, South America, Mexico, and our own rich possessions on the Pacific, but the monopoly, by the North, of the commerce and travel to the Pacific will be broken up, and a large portion of it secured to our own cities on the Gulf and South Atlantic coast. Let a rail-road be finished from Brunswick to Pensacola, and steam-ships be started from the former place to New-York, and from the latter, via New-Orleans and Havana to Chagres or Tehuantepec, and the route even from New-York to San Francisco will be shortened a whole week, or more, in time, and between the southern and western states and San Francisco, there will be a saving of more than two weeks in time, and a large sum in money."

2. TENNESSEE.—The last legislature passed two important acts: The first to regulate county subscriptions for rail-roads. The county court may take the sense of the *legal voters* of the county, whether a subscription shall be made or not—provided the money be spent in the county. The tax to belevied upon the taxable property, privileges and persons by law liable to taxation in the county. Not more than 33 per cent. shall be collected in one year. Payers of the tax receive certificates which may be traded or assigned, and are receivable for freight or passage upon roads, &c. They constitute stock in the company. County bonds may be issued redeemable out of the taxes, &c. This act is much wider in its scope than the one lately passed in Louisiana. The other act to which we referred establishes a system of internal improvements in the state, by granting aid to the extent of $8,000 per mile to each of a number of rail-road companies. The bonds of the state are to be issued for that amount as soon as thirty miles are in every respect completed and prepared for the iron. The road must be free from debt. The bonds to bear six per cent., payable semi-annually, and not to have more than 40, or less than 30, years to run. The issuance of bonds gives to the state the highest lien upon the road. On the completion of other sections of 20 miles each, bonds as above will be issued to the companies. On failure to meet the interest on the bonds, the governor shall order the sheriff, &c., to take possession of the road, and administer it in the name and right of the state, until the interest is paid, or the courts shall order sale of the road, &c. Five years after completion of the road the companies shall set apart one per cent. per annum on the amount of bonds to be

used in the purchase of the bonds of the State of Tennessee, receiving credit for the same. No road can receive state aid unless it shall complete 30 miles within the next four years.

The following is the list of roads embraced within the schedule, but there are a great many provisions, limitations, &c., in regard to routes, which we have not space to include here:

The provisions of this act shall extend to and embrace the Chattanooga, Harrison, Georgetown and Charleston Rail-road Company, the Nashville and North Western Rail-road Company, the Louisville and Nashville Rail-road Company, the South Western Rail-road Company, the McMinnville and Manchester Rail-road Company, the Memphis and Charleston Rail-road Company, the Nashville and Southern Rail-road Company, the Mobile and Ohio Rail-road Company, the Nashville and Memphis Rail-road Company, the Nashville and Cincinnati Rail-road Company, the East Tennessee and Georgia Rail-road Company, the Memphis, Clarksville and Louisville Rail-road Company, and the Winchester and Alabama Rail-road Company, so far as the main trunk roads to be constructed by said companies lie within the limits of this state and not otherwise; and said companies shall have all the powers and privileges, and be subject to all the restrictions and liabilities contained in this act. *Provided*, that this act shall not extend to or embrace more of the road proposed to be built by the Memphis, Clarksville and Louisville Rail-road Company, than that part which lies between the Kentucky line and the Nashville and North Western Rail-road, or the Nashville and Memphis Rail-road. *And provided further*, That this act shall not extend to or embrace the East Tennessee and Georgia Rail-road Company, unless said company shall extend the road so as to form a junction with the East Tennessee and Virginia Rail-road at Knoxville; and in the event said company fail or refuse so to extend their said rail-road to make said junction, then all the rights, powers and privileges, with the restrictions and liabilities of this act, shall extend to any company that may be hereafter chartered for the purpose of building a rail-road to make said connection; and in no event shall the provisions of this act extend to or embrace more of the East Tennessee and Georgia Rail-road than that part which lies between Blair's Ferry and the city of Knoxville. *And provided*, That any line now existing on the East Tennessee and Georgia Rail-road shall not prevent the issuance of bonds for its benefit as herein provided, but the affidavits required in the first section of this act shall be deemed sufficient as applicable to said company, if it is stated in said affidavits that no lien has been created on said road since the passage of this act.

3. LOUISIANA] RAIL-ROADS.—The late act of the legislature for the organization of corporations for works of public improvement and utility, is based upon very liberal principles, and is a great step in advance of our past policy. Under this act, charters have been framed for the Jackson and Opelousas Rail-road Companies, which have both been organized.

Jackson Rail-road Company—Officers—President, James Robb; *Directors*—James Robb, A. D. Kelly, J. P. Benjamin, J. P. Harrison, Isadore Labutut, W. S. Campbell, John Slidell, W. P. Converse, E. W. Moise, Emile La Sere, H. S. Buckner, Charles Pride.

We extract the first five provisions of the charter—

1. The said corporation shall be called the "New-Orleans, Jackson, and Great Northern Rail-road Company," and its domicil is fixed in the city of New-Orleans.

2. The said corporation is established for the purpose of constructing, working and maintaining a rail-road from New-Orleans to Jackson, in the State of Mississippi, thence northward, through the State of Mississippi, towards the point that shall be deemed most favorable for continuing the communication to Nashville, in the State of Tennessee. The road to be made on such a scale as shall serve for the main trunk of a continuous line of communication between New-Orleans and the northern and western portions of the confederacy.

3. The capital stock of the company is fixed at three millions of dollars, divided into one hundred and twenty thousand shares of twenty-five dollars each. A payment of five per cent. on the amount of each share shall be made at the time of subscribing. The subsequent payments shall be made in such sums, and at such periods, as shall be fixed by the Board of Directors; *provided*, that no call shall be made for more than ten per cent. at one time, and that sixty days' notice of each call shall be given, by publication in two newspapers in New-Orleans and two in Mississippi. Not more than three calls shall be made in any one year.

4. The said corporation shall go into operation and be organized, so soon as shares of stock to the amount of three hundred thousand dollars shall have been subscribed.

5. The business of the corporation shall be conducted at its domicil, in the city of New-Orleans, by a board composed of eighteen directors, who shall be stockholders, of whom six shall be selected from amongst the stockholders residing in the State of Mississippi. A *quorum* shall consist of at least seven directors. The directors shall elect one of their

body as president of the company, at their first meeting after their election. At all elections by the stockholders at all their meetings, each share shall be entitled to one vote.

Opelousas Rail-road Company.—Officers—Christopher Adams, President; *Directors*—C. Adams, Jr., A. Lanfear, J. Y. de Egana, J. W. Stanton, A. Chiapella, J. D. Denegre, R. B. Sumner, L. J. Sigur, L. Leon Bernard, Gen. A. Declouet, Harvey Hopkins, M. O H. Norton.

The first five provisions of the charter are as follows:—

1. The said corporation shall be called "The New-Orleans, Opelousas and Great Western Rail-road Company," and its domicil is fixed in the city of New-Orleans.

2. The said corporation is established for the purpose of constructing, working and maintaining a rail-road from Algiers, on the opposite bank of the Mississippi River from New-Orleans, and thence westward through or near Thibodaux; thence to Berwick's Bay; crossing which, thence to Washington or near it, on the Courtableu, in the parish of St. Landry, and from thence hereafter to be continued to the point on the Sabine River most favorable for the purpose of continuing said road through the State of Texas to El Paso, on the Rio Grande. The road to be made on such a scale as shall serve for the main trunk of a line of rail-road, as shall form a continuous communication between New-Orleans, Texas and the Pacific States or Territories, and such branches as they may hereafter choose to make.

3. The capital stock of the company is fixed at three millions of dollars, divided into one hundred and twenty thousand shares at twenty-five dollars each. A payment of five per cent. on the amount of each share shall be made at the time of subscribing. The subsequent payments shall be made in such sums and at such periods as shall be fixed by the Board of Directors: Provided, that no call shall be made for more than ten per cent. at one time, and that sixty days' notice of each call shall be given, by publication in one newspaper in New-Orleans, which shall be known to the stockholders as the official paper of the company, and such newspapers as may be designated along the line of the road. Not more than three calls shall be made in this year—the subsequent years, the calls to be fixed by the stockholders at their annual meeting in January, 1853.

4. The said corporation shall go into operation and be organized, so soon as shares to the amount of three hundred thousand dollars shall have been subscribed.

5. The business of the corporation shall be conducted at its domicil, in the city of New-Orleans, by a board composed of eighteen directors, who shall be stockholders. The directors shall elect one of their body as President of the company at their first meeting after their election. A quorum to do business shall consist of at least seven directors. At all elections by the stockholders, at all their meetings, each share shall be entitled to one vote.

4. TENNESSEE.—A writer in the Nashville Union thus compares the distances on the two routes via Florence and via Lagrange and Holly Springs, to Jackson, Mississippi, there to connect with the New-Orleans road.

Upon the *air line* theory, let us now compare the distance of the respective Florence and Clifton routes to Jackson, Mississippi, which city is peremptorily called for in the charter of the Nashville and New-Orleans Rail-road, starting from Mount Pleasant, the diverging point:

From Mount Pleasant to Florence	60 miles.
From Florence to Tuscumbia (river included)	5 "
From Tuscumbia to Aberdeen (air line)	85 "
From Aberdeen to Jackson (air line)	147 "
	297 miles.
From Mount Pleasant to Lagrange, as above stated	147 miles.
From Lagrange to Holly Springs	30 "
From Holly Springs to Jackson	190 "
	367 miles.
	297 "
Difference in distance	70 miles.

5. VIRGINIA.—We received some time ago, but omitted noticing, from the press of other matters, an address prepared by J. R. Watkins, Esq., to the people of Richmond, on the subject of the Danville Rail-road. The address is ably written, and digests a large quantity of valuable rail-road materiel. The writer concludes as follows:—

"Richmond has a peculiar interest in the Danville road. It is above all others her own road. Who can undertake to say that the great trade of the West and South-west, which she is so eager to obtain, will never go up the valley and through Manassa's Gap, in the direction of Alexandria and Baltimore? Even if it should be brought through the

Blue Ridge tunnel, there is the Gordonsville and Alexandria Road on this side the mountains to carry it away from her. Nor is she safe with it brought to Lynchburg; for there is a scheme on foot for a road from Lynchburg to Charlottesville. To avert the dangers which threaten her interests will require the greatest wisdom, caution and circumspection on the part of her representatives. But she cannot be prevented from becoming a great emporium of *Southern* trade, though rival interests may prevail over her in diverting that of the West and South-west. For the trade of western North Carolina, (a country of immense fertility,) and south side Virginia, she can have no competitor, save perhaps, Petersburg, her Virginia sister, at whose prosperity she should feel no disposition to repine. That noble region she holds in the palm of her hand. She can unite herself to it, if she will, by the strongest ties, social and political, until both shall become identical in interest and in feeling. She can thus acquire a strength which may make her irresistible in the councils of the state. Her present position is critical; no time is to be lost. To achieve an object so important, but one thing is necessary, and that is, for her hotel-keepers, her merchants and other business men, her professional men, and her mechanics, to come forward at once and *subscribe their money.*

6. TENNESSEE.—Mr. Beirne, President of the Memphis and Charleston Rail-road Company, in a late address, and after the refusal of the legislature of Mississippi of the right of way to the company through her counties of Tishimingo and Tippah, except upon conditions which cannot be complied with, speaks as follows:

"It is known to the stockholders, that heretofore purchases were made of the "Memphis and Lagrange Company," and the State of Tennessee, of their interest in the Memphis and Lagrange track, and also the interest of the "Tennessee Valley Rail-road Company," with all its rights and privileges in what was known as the Tuscumbia, Courtland and Decatur Rail-road; that these roads were made a part of the main trunk of the Memphis and Charleston Rail-road; that iron rails of the most approved T pattern, to the amount of 8,600 tons, were bought for the purpose of constructing these roads. The contracts have been entered into for the purpose of putting them in running order.

It is now announced that the estimated cost of the Lagrange portion, in running order, was found to be $360,000, and the Valley Rail-road $276,000; making the aggregate cost of these ninety-two miles of the Memphis and Charleston Rail-road $636,000; that the grading, cross ties, engines, burden cars, laying the track, &c., contracted for at prices known, insures the completion of that portion of the road within the estimate of the engineer; and the question is confidently asked, where can ninety-two miles of rail-road in the United States, through so productive a country, be built for the same money?

The President of the company takes this medium of informing the stockholders, that, in a recent visit to New-Orleans, bills of lading had been received for over 4,500 tons of iron rails. Two cargoes had arrived—arrangements were made for receiving and forwarding—instructions left with the agents of the company, to forward, as fast as possible, and on the best terms, the iron to Memphis and Tuscumbia; two cargoes of the same have been received at Memphis; and that a meeting of the directors was convened at this place on the 10th instant. The meeting of the board thus convened continued in session from the 10th to the 13th, at 10 P. M., and the President takes infinite pleasure in saying, that, during the deliberations, no directors could have manifested more zeal and greater desire to promote the ultimate success of the enterprise.

At this meeting it was ordered that contracts be entered into for the grading, &c., of that portion of said road from its intersection with the Nashville and Chattanooga Rail-road to Decatur and sections Nos. —— west of Tuscumbia. For all of which bids were made (including the bridge at Decatur) by responsible contractors. That the President direct a survey to be made from Lagrange, Tennessee, to the most suitable point on the Tennessee River in said state, and from a suitable point west of Tuscumbia to the most suitable point on the Tennessee River in the State of Alabama, below obstructions to navigation, and then to ascertain the most practicable way of connecting these two points on the Tennessee River, all of which is to be reported to a future meeting of said board.

It will be perceived that the work for the construction of the Memphis and Charleston Rail-road has commenced in earnest, and all that is wanting is confidence in the ability and punctuality of the company in the successful prosecution of this great enterprise.

7. GEORGIA AND SOUTH CAROLINA.—Mr. Whiteside having been deputed by the legislature of Tennessee to present a memorial to the legislature of Georgia on the conflicts which had arisen between the East Tennessee and Georgia Rail-road Company and the Union Branch Company, of Georgia, thus speaks of the action of the last-named state upon the subject of the bridge across the Savannah River, and of a route from the mountains of Tennessee to Charleston other than by the way of Augusta or Savannah:

A bill was introduced and discussed in the House of Representatives, to authorize a connection of the South Carolina and Georgia Rail-roads at Augusta, and was rejected by a very large majority, for reasons, doubtless, which are set forth in the report of the

committee of the House of Representatives, to whom that branch of your memorial was referred.

It may be taken as expressing the decided sentiments of a very large majority of the people of Georgia, and a fixed determination by them never to permit the desired connection—the avowed object being to force the great trade expected from the West to their own seaport at Savannah.

Competition in transportation to the near Atlantic ports, and in trade at the great marts of commerce, are things of immense value to all the great agricultural, manufacturing and commercial interests of Tennessee and the neighboring states of the interior. This competition would ensure low freights and good accommodation on the great thoroughfares, and the highest prices in market for our products. And when we consider the immense amount of exports which we are certain to place on the rail-roads leading to the Atlantic at no distant day, we can form some estimate of the great advantages to result to our people from low rates of transportation, and full prices in a free and extended market for their products.

It would not be extravagant to say, that in a very short time, from the rapid extension of rail-roads which will result from the liberal and enlightened policy which you have just adopted, this want of competition would, in ten years or less, tax the people of our state alone enough to build a line of rail-road from Chattanooga to the Atlantic Ocean.

The tax in the form of tolls and drayage at the Augusta bridge—the damage done to the merchandise and produce, in loading and unloading, from the cars, and exposure while passing from depot to depot—the detention and scattering of stocks, &c., are impediments on the line to Charleston, operating perpetually, to the annoyance and loss of all who adopt it as a commercial highway, wholly incompatible with that rapidity and freedom of intercourse with the Atlantic, so essential to our success in the grand scheme of internal improvements on which we are embarking, and to our prosperity as an agricultural and commercial people.

Taking it, then, for granted that we are, in all time to come, to be forced to the port of Savannah, on lines of rail-road, which are even now unable to accommodate their own local and rapidly-increasing business without ruinous delay, and which will be wholly incompetent for the great increase of trade, which will soon seek a transit between the Atlantic and our own neighboring states,—in view of the great interests at stake, it behooves us to go to work at once with the energy and spirit which characterize the people of the Northern states, and open a direct, unbroken communication by rail-road with the Atlantic at Charleston and Wilmington.

South Carolina has already extended her rail-roads from the coast to the foot of the mountains, and but a short space intervenes between them and our roads in Tennessee.

Recent explorations are believed to establish the fact that, without a tunnel, and on easy grades, a rail-road may be run from Anderson, South Carolina, to a connection with the East Tennessee and Georgia Rail-road, so as to give a much shorter line from East Tennessee, Kentucky and Ohio, to the ocean, than the one by way of Augusta, and equally as short a one from Chattanooga, the head of the Nashville and Memphis lines of rail-road.

This route has not heretofore attracted the attention it deserves, from a belief that the right of way could never be had from the State of Georgia to pass the most favorable gap in the mountains, which is just within the north-east corner of the state; but at the recent session of her legislature a favorable charter was granted for that purpose, and the way is now open for building the road.

The task of its accomplishment is before us, and must be performed. We owe it to our greatest interests, and we owe it to the successful accomplishment of the great system of rail-roads which your enlightened forecast has decreed, by a pledge of eight millions of dollars of public aid, that it shall soon come into operation among us.

This state aid will call forth even a greater amount of private capital to be invested in these enterprises, and we may soon expect an investment little, if any, short of twenty millions of dollars, depending mainly for a profit, or profitable use, on an easy and expeditious communication with the Atlantic Ocean.

Shall we be confined to the exactions—the monopoly—of a single line of road to a single point of trade, and this road now, in the absence of any rail-road connection at the West, confessedly unable to accommodate the business which is already offered to it? The whole line from Chattanooga to Savannah is blocked, and there is scarcely a warehouse on it that has not freight awaiting transportation, which it is not in the power of the line, or any part of it, to give.

Charleston, with the aim and spirit which prompted her to heavy pledges in former times to reach Cincinnati, and more recently to bestow her treasure, with no niggard hand, for the construction of rail-roads to the Cumberland and Mississippi rivers, will doubtless, to perfect the great system which we are just establishing, aid us in removing this only barrier which intervenes between her and the great West.

The Nashville and Chattanooga Rail-road is verging upon that point where it is to become a great element of power in the prosecution of a direct, unobstructed line to Charleston. That company will be found ready to do its full share when the time for action comes.

The Carolina, North Alabama, North Mississippi, and many of the Kentucky roads, having a direct interest in this line, their co-operation, and that of upper and central South Carolina, may be confidently anticipated.

If the charters already granted by you do not sufficiently provide for this great connection, suitable additional enactments should be made at once, leaving untrammeled, by calls for particular localities or points of connection, the way open for the selection of the best route or routes to be found to the North Carolina line in the direction of Clayton, Georgia, and Anderson, South Carolina.

8. SOUTH CAROLINA.—The people of Charleston, apprehensive of being cut off from the direct route of travel North when the Manchester and Wilmington Road is completed, have obtained a charter, and are now pressing for a rail-road from Charleston, or from any point on the east bank of Cooper River, within three miles of Charleston, to such point on or near the Wilmington and Manchester Rail-road, west of the great Pee Dee, as may be selected; and in case the route which may, on examination, be found most eligible, should not pass by or near the Delta of the Santee and the town of Georgetown, then the company shall be authorized to construct a branch rail-road, or a plank-road to Georgetown. It shall also have authority to construct branch rail-roads or plank-roads in any direction, and to any distance not exceeding twenty-five miles from the main track of the said rail-road.

9. MISSISSIPPI.—*Presuming* that the New-Orleans and Jackson Rail-road will take the route through Baton Rouge, the Natchez papers are proposing an extension to that city. Would it not be well for Natchez to make a move to induce the company to come this way, as there are two important links in the chain to Jackson already finished or graded? From Bayou Sara to Woodville there is a road already in successful operation, which could be bought out by the New-Orleans and Nashville Company; and from this place to Torrey's store, forty miles, our old road is graded, and can be had by the New-Orleans Company by the mere asking for it. The only two links then to fill up will be from Baton Rouge to Bayou Sara, and from Woodville to this place, which last would be done by the citizens of Wilkinson and Adams counties, without doubt. Natchez alone could take half a million of stock to induce the company to come this way, and the citizens of Wilkinson are as public-spirited as any people in the south-west, and will take as much stock as any other community of the same population along the whole route. In addition to this, the road from Torrey's store to Jackson (which last place the New-Orleans and Nashville Road is obliged to touch) has been once surveyed and marked out, and found to be one of the most eligible in the state for a rail-road, pursuing, as it does, a high level ridge almost the entire distance.

There are other advantages to this route, some of which it may not be amiss to notice. In the first place, it will save forty miles of grading between Baton Rouge and Jackson, and will pass through the richest and most populous portions of western Mississippi. Striking Natchez, it will receive an immense trade, from which it will be cut off if it takes a more easterly direction, and will eventually intercept the trade which is destined to come to Vidalia from the Arkansas and Texas roads, which will certainly be made to the river opposite this place, and that within a few years.

10. GEORGIA.—In a late report of a committee of the Legislature of Georgia upon the Western and Atlantic Rail-road, we find the following upon the importance of the work:

The committee, in the close of their labors, cannot refrain from calling the attention of the legislature to the importance of the Western and Atlantic Rail-road, its position and its prospects. Its northern terminus is in the city of Chattanooga, from which point diverges a system of rail-roads which penetrate every portion of the eastern Mississippi Valley. The East Tennessee Rail-road, leaving our road at Dalton, extends into the fertile valleys of East Tennessee; its continuation forms the Virginia Rail-road, which, tunneling the Alleghany Mountains, joins the extensive system of rail-roads recently planned by the State of Virginia. When this work is finished, there will be an unbroken rail-road track from Washington City to Montgomery, Alabama. Our road will form an important link in this great thoroughfare of trade and travel. On the west, the Nashville and Chattanooga Rail-road Company are overcoming obstacles once considered insurmountable, and are rapidly pushing their work to completion. From some point on this line the Memphis and Charleston Road diverges, and, in a distance little less than three hundred miles, reaches its western terminus on the banks of the Mississippi.

Two lines are spoken of from Nashville—one to Louisville, Kentucky, another to some point on the Mississippi River. From undoubted information, we learn that these two great enterprises will be completed. All these improvements will necessarily become valuable feeders to our state work. The 1,500 miles of navigation furnished by the Tennessee River and its tributaries, concentrate upon Chattanooga an important steam and flat-boat trade. The fertile bottoms drained by these streams produce, in profusion, the staple articles of food so much needed by the planters of Georgia, South Carolina, and Alabama. The other terminus of our road is in the city of Atlanta, from which point rad iate three great lines of railways, which embrace, in their continuations and branches,

the whole of Georgia, most of South Carolina, and a portion of Alabama. They also connect the navigable waters of the Gulf with the Atlantic Ocean, dispensing the benefits of cheap and sudden communication for trade and travel to nearly two millions of people. Our state road forms the *only connecting link* between these great rail-road centres—Chattanooga and Atlanta—and no other line can ever be built which will seriously interfere with our monopoly, for the conformation of the country forbids it. Between Norfolk, Va., on the Atlantic, and Mobile on the Gulf, there is no seaport which will not be reached or controlled by the lines diverging from Atlanta. This secures the concentration of the Mississippi Valley trade at that point over our road, to be distributed, by its connecting roads, over this extended section.

11. ARKANSAS.—We have received an interesting letter from Little Rock, signed "Boston Mountain," which abounds in very judicious suggestions upon the subject of south-western industrial independence, and proposes many appropriate remedies for the depression which has fallen upon us. We can only extract the conclusion of this letter:

"To accomplish this, and even more, all we want is to establish banks as the wants of the country require, upon a mixed stock and specie basis—such as Ohio, New-York, and other states have adopted, and all things else will be added."

12. TEXAS.—We extract the following from the letter of a very intelligent gentleman at Clarksville, Texas, who was a member of the late Rail-road Convention in New-Orleans:

"I sometimes laugh at the proceedings of our great Rail-road Convention, and the very *appropriateness* of the two great speeches of the session to the objects contemplated—I mean those of Robb and Benjamin. What were they but wholesale attacks upon the constitution of Louisiana, the laws of the state, and the municipality regulations of the city of New-Orleans *in particular*? Now was this not a "*dainty dish*" to serve up to your guests after inviting them to a consultation on rail-roads? But to get back to our Little Rock Convention. Its object is to devise ways and means to finish one road; or, in the language of Mr. Benjamin, it has a "*local object*," the construction and completion of the road recommended by the New-Orleans Convention, beginning at a point on the Mississippi at or near Memphis, and running across the State of Arkansas via Little Rock, to some point on the north-eastern border of this state, now that the road will be built from Memphis to Little Rock, may be said to be a *fixed fact*. If it continues on to this section of country, or reaches Red River at any point above the raft, it will cut off an immense amount of trade and travel from your city. This region is rapidly filling up with a planting population; and the present, or rather the past year, over seventy thousand bags of cotton have been made above the raft. The present season is a fine one to keep up the rail-road excitement. Boats from our landing are charging us $4 a bag for cotton, and $2 50 a barrel for back freight. This is glorious. I hope it will continue. It will, if it does, build the road. For my part, I wish Red River would close up so completely with raft, from Alexandria to Fort Washita, that you could not force an Indian canoe through. Necessity is not only the mother of invention, but also the lash which drives the sloth to the use of those means already invented. As long as we have a kind of "*it will do*" water communication, it is hard to get the people to the trial of any other, especially when it costs money."

13. GEORGIA.—We have received the annual report, 1852, of the Girard Road, intended to connect Mobile Bay with Columbus, Geo., and thus open uninterrupted travel to the north. Forty miles are under contract, and will perhaps be graded within the year. One hundred hands are engaged on the first twenty-two miles, and the number will be swelled, if possible, to five hundred during the summer. Columbus has subscribed as a corporation $150,000 for iron. Subscriptions payable in grading received to the extent of 170 miles, $491,400. Donations of alternate sections of land are expected from Congress.

14. SOUTH CAROLINA.—*Charleston and Hamburgh Road.*—We extract from the report of the president, Mr. Conner, for 1852.

Dividends declared since 1844.

1844.....dividends cash.....5 per cent.	1848.....dividends cash.....2½ per ct.
1845..... " " .....5 2-3 "	1849..... " " .....4 "
1846..... " " .....5½ "	1850..... " " .....6 "
1847..... " partly scrip.5 83-100	1851..... " " .....7 "

	Passengers.	Amount.	Up and down. Amount.	Total Receipts.	Bales of cotton.	Barrels of flour.	Bushels of grain.	Barrels of turpentine.
1844..	54,146	176,591.58	312,547.37	532,869.95	186,638	..	..	..
1845..	56,785	170,862.91	342,316.71	558,697.71	197,657	..	..	..
1846..	64,136	189,644.87	351,689.92	589,081.52	186,271	12,148	2,369	48
1847..	77,579	222,148.93	387,634.00	655,275.30	134,302	19,043	338,848	3,189
1848..	75,149	221,363.59	535,594.56	800,073.54	274,364	15,447	203,485	5,753
1849..	92,713	223,325.42	621,990.32	892,403.16	339,999	1,507	66,904	13,919
1850..	117,351	272,383.37	593,356.78	912,720.25	284,935	125	14,515	9,083
1851..	128,590	287,341.60	664,184.03	1,000,717.98	287,590	526	547	4,193

15. TEXAS.—We have received a private letter from Henderson, Rusk county, Texas, in which the author speculates with much intelligence upon the importance of the proposed road from our city into that region. We can only offer one extract from the letter:

"Cotton could be grown at moderately remunerating prices, where now at the low rates to which it is tending, and at rates of previous years, it can hardly, adding cost of hauling, be made a profitable culture. The cost of hauling at this distance from Red River is about $5 per bale; add $1 25 for freight, storage and commissions for shipping, and the outlay is about $6 25 each bale to get it to market; whereas, a rail-road could convey the same article at about $1 to $1 25 per bale more expeditiously, at less risk, and meet a market at any precise period desired. The same rule would hold good in the transmission of cattle, saving by a large amount in the weight, and the better condition of the beef, as well as the hazard and loss at present attending their conveyance. Other articles would largely enter into the list of productions, such as sheep, poultry, mules, horses, corn, hides, pelts, &c., besides the greatly increasing product of our western wheat, which is grown with a greater yield than in New-York or Virginia, of a quality nowhere inferior.'

16. SOUTHERN AND WESTERN RAILWAY CONNECTION.—The Knoxville Register publishes an address to the States of Ohio, Kentucky, Tennessee, Alabama, Georgia, South Carolina, and North Carolina, proposing a great rail-road convention to be held at Knoxville, Tenn., during the month of August, to revive the old project of a south Atlantic sea-board connection with the cities of Cincinnati and Louisville, via Knoxville. The world has never presented such examples of great enterprises as are now developing themselves in all parts of our ocean-bound republic; and from present appearances, the list of gigantic projects of internal improvements is to be much enlarged. Within the next ten years there will probably be from three to five great and continuous lines of railway running from the great Lakes to the Gulf of Mexico, and twice as many more running from the Atlantic sea-board to the Mississippi River, and probably we shall also have in rapid construction a single great line from the Mississippi River to the Pacific shore. There is room enough for all. The intersection of these great backbone and rib lines of railway promises to employ the capital and energy of the country to a very considerable extent; and as these enterprises are mostly of a healthy character, we welcome them. We trust that the above convention will be well attended.

17. VIRGINIA PUBLIC WORKS.—The Board of Public Works of Virginia have made their report to the legislature, showing the great interest which has been awakened in that state within a few years, in regard to works of internal improvement. The annexed table presents a condensed view of rail-road progress in the state, together with the interest of the state in their capital stock.

	Miles in length.	Miles completed.	Miles in progress.
Appomattox R. R. (late City Point)	9	9	—
Clover Hill Rail-road	11¼	11¼	—
Blue Ridge Rail-road	16¼	—	16¼
Greenville and Roanoke Rail-road	21	21	—
Manassa's Gap Rail-road	103	—	60
Orange and Alexandria Rail-road (including branch)	98	30	38
Petersburg and Roanoke Rail-road	60	60	—
Richmond and Petersburg Rail-road	22	22	—
Richmond, Fredericksburg, and Potomac Rail-road	76¼	76¼	—
South-side Rail-road	122	30	75
Tuckahoe and James River Rail-road	4¼	4¼	—
Seaboard and Roanoke Rail-road	95	80	15
Virginia and Central Rail-road (to Covington)	195	105	90
Virginia and Tennessee Rail-road	209	50	100
Winchester and Potomac Rail-road	33	33	—
Richmond and Danville Rail-road	147	46	101
Northwestern Rail-road	100	—	—
Baltimore and Ohio (in Virginia)	240	99	141

Length of Rail-roads in Virginia	1,602¼	miles.
" " " completed	676	"
" " " in progress	366¼	"
Capital stock (leaving out Baltimore and Ohio Rail-road)	$116,117,100	00
State interest	7,364,433	33

Besides these rail-roads, Virginia has about 872 miles in length of the most capacious and substantially-constructed canals in the Union.

18. MOBILE AND OHIO RAIL-ROAD.—From a late report of the Company, made to the stockholders, we extract the following:

"Summing up, in conclusion, the resources which have been accumulated by the Company to this time, and arranging them in a tabular form, we have the following result:

Road complete, in working order to Citronelle, 33 miles, including equipment—also, cost of all surveys, locating line, &c., paid for by	
Mobile subscriptions, say	500,000
Mobile 2 per cent. tax*	1,100,000
Subscriptions in Mississippi, private and county, per previous statement	1,075,733
Lands donated by Congress, as per estimate	3,872,854
Total	$6,548,587

"The lands included in this estimate, to be made most available to the stockholders, should be withheld from sale until after the completion of the road, when they will have attained a higher value. They are now, however, at the disposal of the Board, to be offered in security for a loan of five millions to furnish the superstructure and equipment, whenever the amount necessary to complete the local work shall be fully made up. With the spirit now prevailing along the line, it is believed that the deficiency at present existing can be provided for during the coming spring and summer. Should these expectations be realized, the remainder of the road can be put under contract immediately after, from Pontotoc to the Ohio River, for graduation, &c. The Board entertain no apprehensions, that with the securities which they will then be prepared to offer, any difficulty will occur in negotiating the loan desired upon very favorable terms. This accomplished, they will be enabled to prosecute the work of construction simultaneously at different points of the line, and finally unite the Gulf of Mexico with the Ohio River by railway within the next three or four years.

19. RAIL-ROADS AND POPULATION.—The general law that rail-roads having their termini in cities, is one of the most powerful elements in the increase of population, is so well understood, that any elaborate explanation of the fact would be deemed superfluous. Everybody knows that rail-roads augment business, compensate labor, give enhanced value to property, and as an inevitable consequence, attract population. If our readers desire some valuable practical illustrations of the operations of this law, let them con with attention the subjoined article. It is from an Ohio paper—the Dayton Gazette—and it is peculiarly interesting to the people of this vicinity, because New-Orleans furnishes the writer a signal example of the evils which have followed the neglect of this great principle of social economy; and because the facts cited in the article are admirably calculated to stimulate the zeal and enterprise of our city, so recently manifested in behalf of projects of internal improvement. We give the article in place of any crude speculations of our own, in the confident belief that we could not occupy our space with arguments more pregnant with truth, and more suggestive of wise counsel for the future.

Growth of Cities.—The recent United States census exhibits many interesting facts respecting the increase of the principal centres of population. We subjoin the population of a few of the larger cities, as shown by the census of 1800 and of 1850.

	1800.	1850.
St. Louis	2,000	80,000
Cincinnati	750 (about)	125,000
New-Orleans	8,000	125,000
New-York	63,000	650,000
Pittsburgh	1,565	83,000
Boston	38,000	212,000
Philadelphia	73,000	450,000

Looking at the increase of these cities for fifty successive years, we readily find the time required for duplication, which is nearly as follows:

St. Louis	9¼ years.
New-Orleans	12 "
Pittsburgh	9 "
Philadelphia	20 "
Cincinnati	6¼ "
New-York	14¼ "
Boston	23 "

But this estimate does not fairly show the true law of growth of the places. New agencies have been called into service within that period, which tend more powerfully to centralize population than any influences known at the commencement of the nineteenth

* Annually for five years, or 10 per cent. on the value of real estate.—Ed.

century—steamboats, railways, telegraphs, coal and iron mines, &c. All these and many other agencies have given a momentum to this aggregation of population, which has been wonderful during the last decennial period. It is interesting also to note the various changes in the relative increase of cities for several successive decades since 1800. One place shows a decreased ratio of growth, another an acceleration without a parallel in history. And these relative changes are not factitious, but depend upon laws which are certain in their operation. Thus, New-Orleans, which in its early history doubled its population in twelve years, would not now duplicate in less than thirty-four years. Boston, half a-century ago, doubled its population in twenty-three years, but now it will duplicate it in twelve and a-half years. Alexandria, Va., once required fifty years for a duplication, but at its present ratio of increase it would require 400 years. Worcester, Mass., once only duplicated in twenty-one years, but now it will require but nine and a-half years.

Let us examine, a moment, the causes of these results. New-Orleans has depended upon commerce alone for her prosperity. Thirty years ago she had no competitor to disturb her inland trade. She was the grand depot of nearly all the trade of the Mississippi valley. Her growth would, of course, be rapid. But during more than forty years, she has brought to her assistance no new element of growth—no rail-roads of consequence, no manufactories. Other cities have sprung up, and by means of rail-roads, canals, &c., have entered into a keen competition with her for the purchase and transportation of the products of the Mississippi valley. Thus, during the last season, much of the tobacco which was formerly landed in New-Orleans, and re-shipped, was purchased and shipped, via Cincinnati and Buffalo, to New-York. At the same time, New-Orleans has depended upon her keen competitors for the simplest articles of manufacture. The reason of this decrease in prosperity is obvious.

Boston furnishes another illustration. Her commercial position is not as favorable as that of New-Orleans. When she depended upon commerce alone, her population duplicated but once in twenty-three years. Now, when she has made the whole Union tributary to her, by her vast system of rail-roads, and sends her manufactured articles to all climes, the ratio of her growth will double her population in 14½ years. Now, let us place these figures side by side:

	1800.	1850.
New-Orleans	12 years.	34 years.
Boston	23 "	12½ "

Here then is a complete reversal of the law of growth, consequent upon causes so plain that he that runs may read.

Taking the ratio of increase of various cities from 1840 to 1850, we find the time required for the duplication nearly as follows:

Milwaukie	3 years.	Marietta	7 years.
Chicago	3½ "	Indianapolis	7½ "
St. Louis	4 "	Pittsburgh	8 "
Manchester	4 "	Dayton	8 "
Toledo	6 "	New-Albany	8 "
Cleveland	6 "	Buffalo	8½ "
Cincinnati	6 "	Detroit	9 "
Columbus	6 "	Louisville	9½ "

The following are the western cities, with one exception, and the ratio of growth is greater than that of any other cities in the world. If these deductions approach to accuracy, and we believe they do, St. Louis, which, in 1850, had a population of 80,000, will, in four years from the date of that census, have a population of 160,000. Cincinnati will have 250,000 long before the next decennial period; and Chicago, at the commencement of the year 1854, will contain not less than 60,000. We cannot but think that real investments in such places will pay beyond any other. A man of moderate means may grow rich while he sleeps. But let us see how this law of growth is to affect other cities of the Union.

	Time of Duplication.		*Time of Duplication.*
New-York	12 years.	Boston	12½ years.
Philadelphia	12½ "	Rochester	12 "
Washington	12 "	Baltimore	13½ "
Richmond	14½ "	Albany	16½ "

Here is another class of cities which we conclude are built and "finished:"

Charleston	35 years.	Newport	65 years.
Natchez	85 "	Poughkeepsie	90 "
Hudson	100 "	Carlisle, Penn	130 "

MISCELLANEOUS.

1.—SOMETHING BETTER FOR THE SOUTH THAN THE FUGITIVE SLAVE LAW.

SEVERAL years ago, when the new constitution of Kentucky was under discussion, and when the slavery agitations were at their height in Congress, a gentleman in Kentucky prepared an ingenious plan for the security of the institution of slavery, which he called the "Ohio River Plan," and which he now furnishes us for publication. Perhaps, in some future day, when the "Compromise" shall cease to be a "finality," which God forfend, and we shall be driven to look about again for security, the Ohio River Plan may receive attention. It has this merit, at least, that Mr. Calhoun, in a letter which we have seen, and which has been left in our possession, speaks of it as "well calculated to test the sincerity of the adjacent non-slaveholding states. If they acquiesced, it would give them a population they utterly detest; and if not, it would expose their hypocrisy. It might thus put an end to the question about fugitive slaves, and is, perhaps, under the circumstances, the only way that an end could be put to it." He adds, however—"But I do not think it would reach the radical cause of abolition, nor stop its agitation. That lies deeper. It has its root partly in fanaticism and partly in the lust of power, which nothing but the united opposition and resolve of the South can successfully resist short of dissolving all political connection with them." This letter was written in 1849.—[EDITOR.

THE OHIO RIVER PLAN.

The time has come when it is useless to put off the consideration of this momentous question. Whether a law of emancipation be a part of the new constitution of Kentucky or not, the cause of the abolition of negro slavery has got so great a headway that it will be found impossible, by any ordinary means, to stay its onward progress to rule or ruin. Nothing short of such a plan as is here proposed can settle the question. My plan has one characteristic which is peculiar to it. It is unlike all others. Some will smile when they read it; others will laugh outright; some emancipationists will be delighted with it; some will abuse the man who concocted it. So will it be, *pro* and *con*, with the *pro*-slavery men. The abolitionists have been fighing for my plan all their lives, but I am afraid they will find the most fault with it. It will please and displease more men than any other plan ever proposed. It will do one of two things; it will either be the means of abolishing slavery, or it will kill abolition in the United States stone dead.

It will be a sure test of the philanthropy and action from principle of the abolition school everywhere. It will settle the question beyond dispute as to what is the best condition in which the negro race can be placed. It will also determine which he prefers. It obviates the great objection in the slave states to all plans of emancipation hitherto proposed; the negroes who become free are not to be sent to Africa; they will remove from the slave states, but their removal will not be attended with any expense to the citizens of Kentucky. If the negro slave becomes free his master has to lose his value, but there is an end to the matter; he is gone, and there is no further trouble. My plan is voluntary, but not compulsory. It is not prospective, but immediate. The negroes in Kentucky who become free are to be colonized in Ohio; Indiana and Illinois may have a portion of them, but Ohio is to be the home of the vast majority. We prefer this for various reasons: the climate of Ohio is very mild, and it is a more healthful country than Indiana and Illinois, and the Ohio people have always showed more sympathy for us than the citizens of either Indiana or Illinois have done. Virginia and Maryland, if they adopt my plan, can colonize in Pennsylvania, New-York, and New-England. Time must determine for the rest.

The plan is this: The first article in the constitution of Kentucky, on the subject of slavery, shall declare that negro slavery is perpetual in Kentucky, or until a new constitution is formed. The second article shall enact that every negro slave who escapes from this state across the Ohio River, shall be free to all intents and purposes, so far as the master in Kentucky has any right to him; provided he is not brought back by the people of Ohio, Indiana, or Illinois. In that case the negro so brought back, shall again become the property of his former master. The spirit of the law proposed, is this, that whenever a negro or mulatto enters Kentucky, he becomes *ipso facto* a slave; whenever he escapes out of Kentucky, by way of the Ohio River, he becomes *ipso facto* a free man. We confer a great honor upon Ohio; and all the dishonor we take upon ourselves. The people of Ohio may object, however, to the law proposed, but they can't help themselves, except

in one way; but as abolitionists, they can't object, for their creed is, that when we know what is a man's duty, we ought to *make him* perform it. If they do not want the Kentucky negroes to be free, they must become like unto those who carry on the slave-trade with Africa; when the slave reaches the soil of Ohio then he is a free man; would they make freemen slaves by returning them to bondage? When once the slave, who escapes into Ohio, knows that he has no "enemy in his rear," it will be impossible to push him on into Canada. The present state of things is this: when a slave escapes into Ohio he is received with all the rights of hospitality, but is soon told, you are not safe here, your former master will pursue you, and you may be carried back to a more oppressive bondage than ever; you must go to Canada, we will help you off with all possible speed; but do not forget for a moment that you are not safe till you reach British soil. But let the negro once know that Ohio soil is as safe and as free to him as British soil, and you had as well whistle to the wind as to try to budge him.

It is perfectly clear, that under this plan the state of Ohio must either allow Kentucky to colonize her slaves within her borders, or she must keep them out, or return them to slavery. Suppose that their great benevolence and philanthropy determine them to adopt the first alternative, then the *great* difficulty in the way of emancipation, or rather abolition, the removal of them and a home for them, is at once obviated. Ohio opens her doors; no expense is incurred in the removal of the negro; his feelings and affections are not outraged; he is still a citizen of the United States; he lives near his former friends and relatives, with whom he can correspond, and he is not expatriated to either an extremely hot or extremely cold climate; and it will be optionary with him to be a slave or to enjoy all the boasted rights of freedom. He will only have to make the effort, and if his master catches him before he reaches the Ohio, his condition will not be worse than it was before. As to any objection which pro-slavery men might have to this law, it will be found more imaginary than real. It is well known, that when a runaway slave crosses the Ohio, although he is a slave according to the Constitution of the United States so long as he remains within the Union, yet that it is useless to pursue; the game is up, the thing is done.

But it is a well known fact, that a large proportion of the slaveholders of this state are willing to lose the value of the slaves, provided they can be removed out of Kentucky and comfortably provided for. These would have only to say: you may go to Ohio; we can't give you free papers, for the State of Ohio has enacted laws to prevent free negroes entering her borders; but as runaway slaves you will be received; but recollect, you have as much right to live in Ohio as you have in Canada. No doubt many slaves would prefer remaining with their masters to being free in Ohio. Some, perhaps, might return after they had tried Ohio awhile. But the worthless and idle and ill-disposed slaves we should certainly get rid of; we might even lend them a helping hand to get across the Rubicon.

But suppose Ohio demurs, and declares that the slaves of Kentucky shall not come into her territories; then she must keep them out. By the law proposed, we do not set our slaves free to go to Ohio or anywhere else. If they go, they go of their own accord and against our will. We declare for perpetual slavery in Kentucky; but for freedom in Ohio. If she establishes a guard along her extensive river border, then she would kill abolition, and we would no longer be disturbed. But if she agreed to colonize our negroes for us, then the great difficulty of finding a home for the negro is removed.

NUMBER II.

That article in the Constitution of the United States which provides that the owner of a runaway slave shall have the right to pursue his slave into the territories of a free state, and there apprehend him and take him home, has been the vital main-spring of abolition from the time that the first slaveholder attempted to catch his runaway negro within the borders of a free state. The South has fought for this article as if her very existence depended on it. It has been the fruitful source of fierce contests in Congress. It has given rise to lengthy, windy and nonsensical state papers between the governors of slave and free states; and withal it has never secured the rights nor property of the South. It has been fruitful of evil, and of nothing but evil. Repeal it to-morrow, and you at once make the abolitionists powerless; you immediately change totally the former aspects of this question in Congress. You will never hear another speech made on the floors of Congress about the evils of slavery; there will no longer a northern man be found to defend the Wilmot Proviso. The only cry will be—save us from the negro race; the South may have all of New-Mexico and California too, if they will only take their negro slaves to those countries; and although we did oppose the Mexican war to prevent the extension of the area of slavery, we are now willing to conquer Mexico even, if you have not territory enough to settle your negro slaves upon. We have been dreaming all this time; we are now wide awake; you southerners have caught the Yankees napping for once; it was a mesmeric sleep; we were fighting a windmill, and it has blown away the foggy atmosphere we breathed; it is now our turn to provide a home for the American negro; we hope you southern gentlemen will contribute something to enable us to send away the negroes among us; we *guess* they might be apprenticed in the

British West Indies; their condition would certainly be greatly improved; they might have to work hard, it is true, but they would be well fed, and they could clothe themselves as well as they are now clothed with us. Besides, it is a warm climate; save us from any more emancipation; save us from Cuba's ever being free; we wish we only knew some way to make a runaway negro's master come after him; *we guess* he would not find much trouble in getting him now.

And what has the South gained by the article in the Federal Constitution, of which I have spoken? How often does a man succeed in getting home a runaway slave who has once got into a free state? and if there was ever any chance, is not that chance becoming less and less every year? Are not the free states passing laws every year to nullify the article of the constitution of which I am speaking? and while they are passing such laws, they are also passing laws to prevent the immigration of free negroes into their states. Look at Ohio, whose citizens are stealing all the negroes from Kentucky that they can—how did they receive John Randolph's negroes? Suppose that while the courts of Virginia were determining which of Mr. Randolph's wills was his real will, the one which liberated his slaves, or the one which did not; suppose, I say, that the negroes had all escaped in a body into the State of Ohio: Then what would the good people of Ohio have said, had the Virginia people gone after them? Why just this—you Virginians are having a mockery of a trial in your pro-slavery courts, with your slaveholding judges and juries; and what chance do these poor negroes, whom their benevolent master willed to be free, have to ever obtain that freedom? If you attempt to take them, it shall be at the risk of your lives. We will secure them that liberty which they are doubly entitled to, and which you iniquitously intend to deny them, at all hazards. This is what in their honesty and Christian charity they would have said, had they got the chance. Does any body doubt it? But the tables were turned. The slaveholding judges and juries of Virginia decided that Randolph's slaves should be free. The executors of the will went to Ohio and purchased lands, and moved the negroes there, and attempted to settle them comfortably upon their own lands. The negroes were to be well provided for. What said the good, honest, charitable, slavery-hating people of Ohio then? Has any body forgotten what they said, and what they did? Liberated slaves they drive out of their borders; 'tis only runaway slaves they are willing to receive. And so would it be again. Take away from the people of Ohio the ability to compel runaway slaves to go to Canada, and in one year they would be making more efforts to prevent the slaves of Kentucky entering their state than the Kentucky people have ever made to prevent their getting there; and, moreover, if the slaves of Kentucky, who have escaped into Canada, could as easily get back to their former masters as they could were they only separated from us by the Ohio River, there is no doubt whatever that hundreds of them would gladly return.

Slavery is not so hard a bondage as the northern philanthropists suppose; and the disposition to run away is a feeling that does not often find a place in the bosoms of well treated servants who are not meddled with by designing fanatics. In all the great moving principles of human action, mankind are very nearly on an equality, in all ranks and conditions of life. Forbid a thing, and the human mind instinctively desires to obtain it. The negro is no exception to this universal sentiment. Let them know that the so-called land of freedom is very near, and they will not be half so much inclined to run away as they now are. 'Tis distance lends enchantment to the view in this as in many other things. The reality is too often a sad disappointment in all human affairs. When the slaves of Kentucky found that they were denied employment in Ohio altogether, or at wages so miserably low as barely to pay for the coarsest food; there would be enough of them who would return to Kentucky to disabuse the minds of their fellow-servants as to the blessings of freedom and the philanthropy of the people of the free states.

It is notorious that the white people of the free states of all classes, have an utter repugnance to being associated with a negro in any manner whatever. They will not allow one to ride in the same car or stage coach with them, and they treat them like dogs in all the relations of life. They have great love for them it is true, but that love increases in geometrical proportion with the square of the distance which separates them. This burning, zealous love sinks to zero when they come in contact. Nor is this antipathy an unnatural one. There is no dispute as to the mental and physical inferiority of the black race. There are many things about him which are repugnant, and it is necessary that a man be raised, or brought up, as the northern people say, in the daily intercourse with him, for this disgust not to obtain. Moreover, it is as common for a man to look down upon and keep at a distance the man whom he considers beneath him, as it is for water to run down hill. The class of servants and day-laborers in the free states and in Europe, is one for which their masters and employers have no sympathy, no regard. What is done for the poor and unfortunate is done by the state; there is no personal feeling in the matter. The American negro slave is the only laboring and serving class on this earth, between whom and his master there is any love, any friendship; and it is the only class of day-laborers or slaves on the face of the earth which is improving. There is not one master in ten thousand who counts the cost in providing for a sickly or decrepit negro slave. In sickness and in old age, they are cared for as one of the family. It

is not so in the *free states* of this Union, nor in any part of Europe. It will not take the negroes long to find out these things. Pass such a law as I propose, and in ten years the South will be allowed to go on in the even tenor of her way, in peace and quiet, undisturbed by northern fanatics and hypocrites. There may be some loss to slave owners for a year or two; but if there is, we must consider that this is a question which must be met; we cannot avoid it; and it is impossible but that in meeting it there must be some sacrifice.

But how must this law be passed? Must there be an amendment of the Constitution of the United States? By no means—never let the Constitution of the United States be interfered with. The free states have no right to legislate upon this question in Congress. Let the states settle it for themselves. Let Kentucky make it a part of her own constitution, to govern her own citizens, not those of Tennessee, or Mississippi. Though no lawyer, I suppose the people of a sovereign state have a right to make any law they choose to govern her own citizens within her own borders. The law would infringe upon the rights of nobody out of the state.

2.—ARTESIAN WELLS IN ALABAMA.

When in Cahaba, I had the pleasure of examining the very interesting Artesian well, bored by Mr. N. B. Read, for Joel Matthews, Esq., at the site of his cotton factory. The depth already penetrated is 710 feet 10 inches. The first bore was about three inches in diameter, and the discharge is 600 gallons per minute, or 864,000 gallons in 24 hours, exceeding, probably, any well in America. Mr. Read is now engaged in rimming out to a diameter of six inches. The force of the water greatly facilitates this operation, as it throws out at the top all the material which the auger detaches.

This, I believe to be the first well in Alabama, which has been sunk below the water, which, rising to the surface in abundance for ordinary purposes, is found beneath the first stratum of soft limestone.

In this locality, this stratum was perforated to a depth of 363 feet from the surface, when a stratum of sandstone was reached five feet in depth. In this formation, marine fossils were found in great abundance, shells, star-fish, &c. Below this in a stratum of gray sand, three feet thick, water was found, which rose to the surface in a bold stream.

This is the point, ranging from 200 to 600 feet below the surface, at which it is customary to cease operations in boring Artesian wells in this country; but in this instance, Mr. Matthews discarded the fear of losing the water, which has hitherto deterred penetration to a greater depth, and allowed Mr. Read, at his solicitation, to extend his operations downwards in search of a more abundant supply. Immediately below the water was found a formation of very hard sandstone, one foot three inches thick. Then a formation which Mr. Read describes as a "dark blue sticky sand," nine feet three inches thick—then blue soft limestone seven feet—bluish gray sand 19 feet—green sand three feet. Below this last stratum, water was again found in a gray sand, or fine debris of mica, quartz and feldspar, probably disintegrated granite, being 40 ft. 6 in. below the first water, and 411 feet 6 in. below the surface. This stratum continued unchanged for 125 ft. in depth, and the water obtained from it greatly augmented the supply. Below this, a hard gray sandstone 11 feet thick was encountered, where water was again found in sand, generally similar to that above the sandstone, except that it was traversed with occasional thin strata of soapstone. This formation, with water, constantly augmenting the discharge of the well as the depth was increased, continued for 299 feet, or 710 feet 10 inches from the surface, where the boring terminates for the present.

It is Mr. Matthews' intention, after he has rimmed out the well to the diameter of six inches, for the whole depth, to continue boring so long as the water continues to increase in quantity. It is the design to tube the well, so far, at least, as to shut off the water found beneath the first stratum of limestone. It is thought that this will greatly increase the force of the discharge from the lower fountain, which is the main source of the supply.

Many wagon-loads of sands have been thrown out from below by the force of the water. The water, however, is perfectly clear and limpid, and pleasant to the taste. Pieces of stone the size of an egg, or larger, or a silver half dollar, if thrown into the well, are immediately ejected.

3.—PROGRESS OF WESTERN TEXAS.

De Witt County.—During a late trip up the country, we visited the settlements on the west side of the Guadaloupe, including Clinton, the county seat of De Witt County, as well as those on the Colettes. Agriculturally considered, there are few counties in the state superior to De Witt—perhaps we may say, there are few equal to it. The lands on the Guadaloupe are unsurpassed in fertility, whilst the back country, particularly on the Colettes and Sandies, is highly picturesque, being just sufficiently rolling to delight the eye and to throw a glow of enchantment over the prospect. Much of this rolling country, too, is rich and valuable, and is settling up quite fast. Besides the Guadaloupe River

running through De Witt County, there are the three Colettes, the two Sandies, the Brushies, and other small streams, all admitting flourishing settlements. Internal dissensions have hitherto retarded the building of a town in this section of the country. Recently, however, the permanent location of the county seat at Clinton has given an impetus to that place, and it now bids fair to become a point of considerable importance.

San Antonio.—This far-famed city we found to be very greatly improved since our previous visits thereto. Many of the residences are truly beautiful, especially those around the memorable "Alamo," that venerable pile so intimately associated with the heroes of Texan story. By the by, we could not but regret that this time-hallowed monument of heroic bravery should have been so completely metamorphosed by the utilitarian spirit of the age, that it has lost all its ancient and striking features—the walls having been repaired and roofs added, as well as other improvements, by its present occupants, the United States Quarter-Master's Department.

There is not, perhaps, in the United States, an inland town of the same size as San Antonio, that is possessed of as much wealth as it is. The property belonging to the corporation is estimated at $200,000, whilst among the citizens there are many who, besides heavy cash capitals, hold large bodies of land that must soon become very valuable. The country around San Antonio has settled up very rapidly during the last two or three years, and is now far a-head of the town in its improvements. Indeed, this is the case in almost every portion of Western Texas.

Seguin.—This beautiful town has risen like magic since the completion of the commodious and well-appointed college buildings that now grace that pleasant place. The Seguin High School consists of a male and female department, managed by trustees, the number of teachers being two males and three females. The buildings consist of two beautiful edifices, 25 by 60 feet each, and are distant from each other about three hundred yards. They are built of stone, two stories high, with cupolas and porticos, and are at once an ornament to the town and a monument to the spirit and enterprise of their projectors. The buildings are precisely similar, we believe, except that the exterior of the female edifice presents the best appearance in its masonry, which, indeed, could not well be surpassed. The cost of each was something over $5,000. Town lots that previous to the construction of these buildings had been worth only $10 and $20, can now be sold for more than $100. And so of all real property. Seguin has wisely taken the lead of all her sister towns in the matter of education—a glorious mission for which she is exceedingly well qualified, and in which she must long maintain an ascendency.

Texana.—We learn with pleasure, that the business and population of Texana, in Jackson county, are increasing considerably. It is evident to the most sceptical, that the position of that place, at the head of good steamboat navigation on one of the finest little rivers within our knowledge, must insure its growth to a goodly size; no interior town in Texas, all things considered, has better navigation than Texana; none, we are sure, from many years of personal acquaintance, is surrounded by a better class of people. The region of the Navidad and Lavaca, though not in the aggregate one of the richest in soil, is, nevertheless, one of the most desirable to the farmer and planter; the bottom lands are rich, while the top lands are diversified in timber land and rich prairie, varying in its texture from stiff hog wallow to light sandy lands, though most usually it is what farmers term black sandy, easy of cultivation and productive. This section is gently undulating or rolling, traversed by creeks innumerable, and, more than any part of this country, capable of receiving and fostering a dense farming population. Texana is the nearest navigable point to that part of the county. With wise measures on the part of her proprietors and merchants, the opening of roads and the encouragement of navigation to our bay, she must become a fine business place. The steamer Envoy has recently made several successful trips to that place.

4.—THE VARIOUS SOILS OF EAST FLORIDA.

Most persons looking at our country, are greatly at a loss how to judge of the character of the various soils they meet with here—their comparative fertility and durability. Persons who are good judges in other countries, distrust their ability to judge properly here. For the benefit of such, we propose to give some general rules which may be relied on—at least they are, in our judgment, confirmed by experiences.

Then, in the first place, the plentiful admixture of lime found in all the soils of East Florida, in connection with a moist and warm atmosphere, renders all our soils both more free and lasting than appearances would warrant.

The abundance of sand found in almost all our soils, would lead to the supposition that they were thirsty, weak, and easily worn. But such admixture of sand in our peculiar climate, and under an almost tropical sun, is a means both of activity and durability. Take those small portions of land here, the soil of which is almost without admixture of sand, with clay and marl very near the surface, it matters not how rich the virgin growth when cleared, the cultivation is hard, and the production uncertain, requiring a peculiar sort of season to suit it, and its long exposure to the sun injurious to its after production. Such lands bog in the extreme wet seasons, and bake when very dry. In another climate they would be extremely fertile—a more thorough cultivation may make them so here.

There are soils here too sandy, both hummock and pine land, which will not produce very freely when fresh, nor last long when cultivated. In some of these the soil is very fine, but light, and almost without any principle of cohesiveness. In some, the sand is extremely coarse; such land will produce freely when fresh, but will soon wear.

There is every color of soil, from black to white. In color there is not such a difference as almost every one imagines at first sight. If the soil is fine, heavy, mellow, with rich growth—such as gumlynn, white oak, cherry, magnolia, mulberry, persimmon—all large and luxuriant, the hummock is good. Buy, settle, stay, be content—you can come it.

To have the clay close underneath is not indispensable either to last or fertility. A deep soil is here preferable; it will stand the droughts better, and rainy seasons better. There is clay or marl under all our lands; some deeper, some shallower.

The greater portion of East Florida is pine land—of this there are as many sorts as of hummock. They are not appreciated as they should be; they are the easiest cleared and cultivated, and some of them but little inferior to the hummocks: for cotton, they are as good if not better. The soils are in their variety and character much like the hummocks. Judge of them in the same way, varying something for difference of growth. There is a great deal too poor to call land; it might be called desert—barren of everything but bushes and spruce pine saplings; these spots are called scrubs. The next are the lands covered with slim red oak trees. Then come pine forests—trees large, growth plentiful. Next in order is an admixture of big bud hickory, and large pine trees. This is good cotton land, and improves by cultivation. Then there are two other sorts, the quality about equal, which would make a land hunter laugh. The one a dark gray soil, covered thick with long, straight pine saplings; and the other hickory land, mostly bordering on the hummocks, with an occasional large oak and pine—the soil dark, fine, heavy, and like the negro's rabbit, good for anything.

There are some low hummocks on the coast and margins of the lakes and rivers very rich, but full wet, requiring much labour to bring them into successful cultivation. In looking at the land in an extremely dry season, one might be deceived. Such as are too low will show it on the roots of the growth, where there will be evident signs of water; the roots of the trees being on the top of the soil, and the buts of the timber large or swelled.

There are some lands on the rivers and lakes stiff, clammy, cold-natured, flat; with much of the cabbage palmetto, somewhat hog wallowed, which is worthless.

The prairies found here are either basins often covered in water, or the margins of lakes and rivers which often overflow and remain so for months; some of these would be productive if they were safe to cultivate; others totally unproductive. No one should risk them until portions of them have been tried and proven good, or until some means have been discovered of neutralizing the noxious property which may be found in them.

Lastly, the occasional appearance on the surface, in pine or hummock, of lime rock, is an evidence of strong land, and is only objectionable when in quantities sufficient to be in the way of cultivating.

These hints will serve to enlighten the judgments of those unacquainted with our soils.

5.—THE SECRET OF NATIONAL WEALTH.

We extract the following editorial of the Boston Courier, which refers to some of the *peculiar* doctrines of the Review. Two notable things will be observed in the extract: 1. *That the South is not a consuming country.* (It was always charged upon us before that we did nothing but *consume*, luxuriously expending all, and taking no thought for the morrow.) 2. *That only consuming countries are rich.* (What a mint must be an *almshouse*, and what "old fogies" must be those—i. e. all the economists—who teach that *production* has something to do with national wealth.) This is a comfortable doctrine, at least.

PORT.—"My wound is great because it is so small."
CAITIC.—"It would be greater were it none at all." [ED.

In a southern periodical, entitled De Bow's Commercial Review, a publication in which much intelligence and ability are mixed up with strange misconceptions of the science of political economy, we have frequently met with elaborate essays on the commerce of the southern states. In these essays all sorts of reasons except the true ones are assigned for its inferiority to the commerce of the northern states, and all sorts of projects except the right ones are devised to quicken the commercial enterprise of the South and place it on a level with its rival at the other extremity of the Union. In the latest number of this journal is an article on the subject of the Commercial Dependence of the South on the North, from which we extract the following.

(We omit the extracts.)—[ED.

Here the old question is raised again: "Why is not the South as rich as the North? Why is not southern commerce as flourishing as northern commerce? Why are not southern ships as numerous as northern ships?" The Review has often attempted to satisfy these inquiries by replying that southern merchants are not so enterprising as northern merchants. But this is only shifting the form of the query, for the question comes up again —"Why are they not so enterprising?"

The southern merchants reply that they have not the *capital* of the northern merchants, and this passes among them as a satisfactory reason for their inferior enterprise. Under this persuasion they have made serious endeavors to induce British merchants to send capital from England into the southern states and establish commercial agencies there—a thoroughly fruitless attempt—as any one may understand who reflects that capital goes where the owner thinks he can make it ultimately profitable to *himself*, and not where it has merely the prospect of benefiting *others*. How came capital in the northern states? How came enterprise here? We had once none of either.

Let the southern merchants lay this fact to heart, for it lies at the foundation of the science of political economy. No country can be rich that is not a great *consuming* country. A country may have a fertile soil, rich mines, good harbors, navigable rivers, a healthy climate, and all natural and geographical advantages, but it will be wealthy only in proportion as it is occupied by a people who require much material in their mode of life, and who use much. Peru is poor—Mexico is poor. They have no commerce, no national wealth, with all their advantages of soil, climate, and the richest mines in the world. They are comparatively non-consuming countries. When you pass through a land and find the people living in huts, and clad in rags, you may be certain there is no national wealth there, let the climate and soil be what they will. Compare Holland with Spain, England with Sicily, Massachusetts with South Carolina, and you see a palpable embodiment of the most important principle of political economy. In all these regions the natural advantages are on the side of the poorer countries.

If the Charleston merchant wonders why fewer commodities are imported into that market than into Boston, cannot he find a ready answer in the fact that commodities go only where they are wanted. Now, which state requires the greater amount of commodities? Massachusetts, where the people from high to low—the farmer and the artisan, as well as the capitalist and the merchant-prince—live in good houses, and are clad in good clothes, whose rooms have carpets, furniture, pictures, books, plate, china, and what not,—where the taste and the intellect, as well as the grosser wants of nature, find objects fitted for their gratification—or South Carolina, where more than half the population dwell in huts, and their wants are confined to a jacket and trowsers, a hoe-cake and a fiddle?

Commodities come to *us* because we want them—and we want them because we consume them. Commodities are not carried to South Carolina because they are not consumed there, and of course not wanted there. If you wish to make a southern state as rich as Massachusetts, encourage the industry of that state, and give it a population of consumers. Paying a foreign laborer is only helping a foreign country to be a consuming country, and therefore a wealthy country. Every wheel that flies round among us, every arm that is raised in labor, becomes a means of increasing the consumption of commodities, of increasing commerce, of increasing national wealth; and it does all these things exactly in proportion as it is well paid for its labor.

6.—STEAMBOAT INSURANCE—LOSS OF LIFE AND PROPERTY, &c., ON THE WESTERN WATERS.

Sometime ago we made a vague estimate of the loss of life on western steamboats as 1 in every 2,000. The following statistics show 482 persons lost to 3,000,000 passengers, or 1 in 6,000, to say nothing of the merely wounded. On the English rail-roads the loss is 1 in 5,000,000.

A report made to the Treasury Department states, that in the year 1851, the steamboats and their cargoes, insured in Pittsburgh, Wheeling, Louisville, and Cincinnati, amounted to $32,811,440, and that the losses incurred amounted to $437,434 66. Of the steamboats and cargoes there were insured in Cincinnati to the amount of $17,038,439; in Louisville, $10,185,855; in Pittsburgh, $4,822,329, and in Wheeling, $764,767. The losses were divided as follows: Cincinnati, $257,428 48; Louisville, $147,582 17; Pittsburgh, $30,434 98; Wheeling, $11,989 03.

The number of steamboats owned and enrolled in these four cities, respectively, in the year 1851, was 330, which were distributed as follows: Pittsburgh, 112; Wheeling, 46; Cincinnati, 111; Louisville, 61. The aggregate tonnage of these boats amounted to 64,297 tons, of which 16,942 tons belonged to Pittsburgh; 7,190 tons to Wheeling; 24,985 to Cincinnati; and 15,180 tons to Louisville. The total number of passengers to and from the four cities named above, chiefly carried on these steamers, was, for the year, 3,050,026. The number of steamboats destroyed in the course of the year, belonging to these four cities, was forty-two, of which number nineteen were snagged and thirteen burned. The total number of lives lost in these several disasters were 482.

GALLERY OF INDUSTRY AND ENTERPRISE.

A. A. SMETS, Esq., of Georgia.

WITH A PORTRAIT.

No. 19.

Mr. Smets is a retired merchant of Savannah, and though he has figured less largely in the commercial movements of that city than many others, he has yet, throughout a very long career, established a character for probity, enterprise, and that sort of public spirit which always stamps the good citizen.

Born at Nantes, in 1795, he had, at the early age of eighteen, enlisted in the army, but instead of being dispatched to the scene of war, he was retained in one of the offices at La Rochelle. Here his promotion to a lieutenancy was about being consummated when the disasters of the campaign of 1814 put an end to the war. A return to private life, and to a clerkship in a mercantile house, succeeded. In this sphere, whilst meditating a departure for New-Orleans to make a home, and whilst husbanding the means necessary for the purpose, he became acquainted with Mr. Charles Maurel, a merchant of Savannah, who, by flattering representations, changed his purpose, and carried him to that city, where he landed in 1816, with high hopes, strong resolves, but unhappily an empty purse.

Mr. Smets now set about amending a somewhat deficient early education, and the attainment of the English language, without which it was evident he could make no advancement. The first book that he read was D'Israeli's "Literary Characters," and forming so strong an attachment for the author, he afterwards procured all of his works, in some cases twenty years before their republication on this side of the water.

In 1820 he married a lady of Savannah, beginning with her the battle of life with but the small patrimony, resulting from the conjoined fortunes of the two, "youth, industrious habits, and devotedness"—a patrimony, however, which makes more fortunes, and is the source of more great deeds in this world very often than "ancestorial bearings," broad acres, burnished equipages, or any of those high inheritances which

> "———— Tumble down,
> And in the dust are equal made
> With the poor crooked scythe and spade."

Soon after his marriage, Mr. Smets formed a copartnership in the lumber business with his brother-in-law, and netted in the first eighteen months the remarkable sum of forty dollars! This little he eked out by sundry writings for lawyers and merchants until it reached a scanty subsistence. The partnership did not long subsist, but by continuing the business on his own account, and by industry, energy, and faithfulness, attracting the favorable attention of several parties in Carolina, Mr. Smets succeeded at last in obtaining consignments which yearly increased in value, until his retirement in 1849 with a very handsome fortune.

Perhaps one of the finest libraries ever collected by or retained in the possession of a Southern gentleman, is that which graces and adorns the halls of Mr. Smets' mansion. It has a reputation wide as the country, and scarcely a scholar or distinguished personage visits Savannah without seeking it out and feasting upon its contents. The man who could, amid all the cares and perplexities of mercantile life, preserve the taste and the inclination for books, and those, too, selected from the classics of every country and time, surely deserves an honorable mention among his cotemporaries, and is as much, by his example, a public benefactor, as he is who rests upon the laurels of building rail-roads, or opening manufactories.

Referring to his taste for books, Mr. Smets has himself said, "The care of a large family and the duties demanded by an extensive concern, did not so completely absorb my time that I could not spend part of it in my library.

Let my troubles be ever so great, I could there cast them all aside. Every one has his hobby. Books have been emphatically mine. Though it never entered into my head to make such a valuable collection as I now have, I ever ardently desired to procure whatever works or literary curiosities I found referred to in the course of my readings. I cannot express my delight on the opening of every new parcel. Thus my library has gradually increased, until I am quite surprised to find myself called upon by every stranger of note visiting the city."

For these literary tastes and propensities, the honorary degree of Master of Arts was conferred upon Mr. Smets many years ago, without his knowledge or consent, by the Oglethorpe University.

We have not the space, however, for a more extended notice, but must content ourselves with a brief extract from a very elaborate and able paper which appeared in the Southern Literary Messenger, last November, descriptive of a visit made by the classical editor, within the sacred precincts of the library of Mr. Smets. Were it possible we would enumerate some of the quaint, curious, and valuable old books and manuscripts which are described, and which run back to a period long anterior to the invention of the printing-press itself.

"We shall not soon forget the enjoyment we derived from a few hours spent among Mr. Smets' treasures, nor the kindly glow of satisfaction which lighted up the countenance of the benevolent proprietor in showing them. And here, if the reader could excuse the digression, we might mention, that of all men those who are afflicted with bibliomania are in general the best disposed to be complaisant to strangers, and then proceed to inquire into the philosophy of so curious a fact. But it suffices to say that Mr. Smets to us, at least, appeared an exception to the class. And as we have not vanity enough to suppose that his courtesy proceeded from any discovery in us of peculiar qualifications to justly appreciate his choice and valuable collection, we must attribute the civil treatment we received to the native kindliness of his disposition alone.

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"The first emotion on entering and casting the eye around upon the magnificent display of the ample shelves, is that of surprise that the visitor has not before heard of so extensive and luxurious a collection. In our country, where so few enjoy the means of accumulating valuable books, and where even those so rarely have a taste for bibliothecal treasures, it is of the rarest occurrence that we may meet with a good and well-selected library. But here the visitor will be apt to say, is surely the most sumptuous, if not the largest and most recherché library in the country. We confess that not the least inducement that leads us to play the guide to the rooms of Mr. Smets is to make more widely known the riches they contain. The library does not rest its claims upon the large number of volumes it contains, of which there are perhaps eight thousand, but upon the choice selection of the authors, and the great rarity of the editions. It is composed principally of English works in all branches of learning and the fine arts, embracing the earlier and later poets—the more celebrated novelists—the best historians and biographers—in a word, every author that can be called standard. To these may be added specimens of the most ancient typography, and of the illuminated manuscripts of the middle ages, such as would tempt the most pious man in the world, if he were only a bibliomaniac, into an utter disregard of the tenth if not the eighth commandment. When we say further, that all the volumes are bound in a manner the most elegant known to the trade, and are arranged in rich cases of mahogany, some idea may be formed of the appearance of the library."

EDITORIAL AND LITERARY DEPARTMENT.

1.—PRACTICAL MEN OF VIRGINIA.

I HAVE long postponed answering your letter, with the hope of being able, while transmitting the names of a few Virginians, distinguished in the Industrial Departments, to give it somewhat of the character of a *Catalogue raisonné*. But my engagements are of a nature, I find, to forbid doing this in any way just to them or myself—or to your journal. Desirous, however, that by no omission of mine, the merited tribute of public appreciation (for which you have provided so happily-conceived a channel) shall fail to crown the memories of some, at least, of these exemplars and models of their race, I send their names—briefly indicating their paths of usefulness, that you may judge whether they are the characters you seek after, and sometimes the sources to which you might, perhaps, successfully apply for proper sketches of their several careers.

Among the earliest of such known to me was Joseph Gallego, of Richmond—an old obese, dark, heavy-looking Spaniard, as I remember him, tottering off the stage of life,

forty years ago, when I came—a child then—tottering on it. He left a high reputation for sagacity, great mechanical ingenuity, rare business capacity, energy, and steady perseverance. He erected those mills bearing his name, which gave to the Richmond flour that No. 1 reputation in the markets of the world, which it has never lost; he opened and extended that branch of commerce, which, going on under not unworthy successors, has continued from that day to grow in magnitude and importance, till it is now one of the chief elements of the export trade of the state; and he impressed, by his constant care and solicitous regard for the *standard* value of his name, an estimation of the "Gallego" brand, that made it current as sterling gold in foreign markets long after his hand ceased to stamp it (perhaps it is so even now)—but warranted still by the posthumous skill and care of his successors.

In agriculture, JOHN TAYLOR, of Caroline, is altogether the most distinguished name Virginia can present—(while he was not one of her least eminent contributors to political knowledge, and, perhaps, the most charming talker she has produced.) He was an acute and thoughtful observer—of an original self-relying cast of mind—a bold but not rash or hap-hazard experimenter—he made [more than] "two blades of grass grow where one grew before," and while he presented the model-farm of the state, made so by superior skill and judgment, and care withal, he had no reason (as too many have who get up show-farms) to withhold from scrutiny the balance-sheet of the account-book of the farm. A young man, I had the good fortune to witness the descent towards the western horizon of his great mind, as it went down with retarded pace and with mellowed, but hardly-waning lustre, to its setting. His neighbor, friend and admirer, Mr. J. H. Bernard, yet lives, and might, most competently, if he would, give you many traits and anecdotes of his life that would well repay the reading. His address is Port Royal, Virginia.

JOSEPH C. CABELL, of Nelson—not yet passed away from the stage—deserves the most distinguished mention in connection with the great subject of Internal Improvement. Originally of good mind, "ripened and matured by travel, observation, and studious leisure"—worthily ambitious to connect his name with some great work of good to his native state—the fame of Clinton seemed that he has sought to emulate—while no field he at once saw for achieving such a renown could be wished fitter than was Virginia; and devoting himself for years to the amassing of information, by seeing and reading of all sorts that might contribute to the success of such an achievement, he threw himself, now some 20 years ago, energetically, and with his whole soul, into the undertaking. He traversed the state, familiarized himself with every hill and mountain, every stream and valley—addressed the people everywhere and people of all sorts, and at all times, *nocte dieque*—dispelled the thick fogs of ignorance that enveloped them—roused their dormant energies, and stimulated doubting governors and timid legislatures to sympathy and active co-operation. He set, finally, the great ball in motion. Our Central Canal, which he designed should penetrate, should traverse the state, from the head of navigation on our Eastern to steam-navigation on the Western waters, he pushed half-way to the accomplishment of his great design, when its heavy cost and great delays, its hampered finances and the growing favor of other improvements, brought it almost to a stand-still; and, as a natural consequence, brought along with them, also, the deposition of its great patron. Whether that grand work is destined to consummation or no, is yet problematical; whether to success, if completed, may admit also of doubt. If success attend it, to him will all men accord the eternal honor; but if it fail, its very failure will have been the germ of the other great improvements that shall supercede it, and still, to him, in that event, more than to any other man in the state, must candor award the merit—the overtopping praise of having first and most aroused to practical and efficient action the dormant, tardy, inert inactivity of the people of Virginia, under which, as under an incubus, she writhed, without progressing, with ineffectual throes and purposes; but which thrown off, as now, she is seen—like some sluggish argosy waked up by the breeze—bounding forward on a career of augmented and increasing prosperity that shall renew for her the warm admiration of the world, and excite the not-unbecoming exultation and pride of her own sons.

For the present I pause—possibly to extend the catalogue at some other leisure hour, if you desire it. What I have written will give you a glimpse merely of some of the characters I think worthy of a better setting, and the means of pursuing your inquiries, I hope, with advantage. If I write *currente calamo*, as you see, it is not from indifference to the object or the subjects, but because, in good truth, my dear sir, I have to snatch an interval from (too) engrossing engagements; and must write you thus unsatisfactorily, and send what I write with all its imperfections on its head—or not at all.

2.—SPEED ON WESTERN RIVERS.

Whether this extraordinary "running" is altogether compatible with the lives and security of passengers on western waters; or whether it has ever had anything to do with those "burstings," "snaggings," "collisions," &c., which furnish weekly items for the newspapers, and transient excitement to the public mind, we shall not stop here to consider. The traveling world think it of no importance, and why should we?

The Reindeer.—Great Feat.—The Reindeer, Capt. Samuel Montgomery, arrived at Louisville, from New-Orleans, Sunday afternoon, at 2¼ o'clock, having made the trip in the heretofore unequaled time of *four days, twenty hours and forty-five minutes.* She made eighteen stops during the run—in addition, she took in much bad fuel, which detained her some time in the run. Her time out, to various points, is as follows:

From New-Orleans to		*Miles.*
Fairchild's Island	24h	—
To Vicksburg	31h 25m	420
To Cypress Bend, below mouth of Arkansas	48h	—
To Memphis	2d 16h 45m	810
To Ashport	3d	—
To Cairo	3d 12h 45m	1,020
To Paducah	3d 16h 50m	—
To mouth of Wabash	4d	—
To Evansville	—	—
To Louisville	4d 20h 45m	1,400

The Eclipse.—Four Days Eighteen Hours from New-Orleans.—The Eclipse arrived this morning, at half-past five o'clock at Louisville, bringing New-Orleans dates of the 5th, making the run in four days and eighteen hours from port to port. This fully entitles the Eclipse to the title of the champion in speed, as well as size and magnificence.

Time out from New-Orleans as follows:

To Red Church	2hs
Bonnet Carre Point	3hs 15m
Jefferson City	4hs 40m
Donaldsonville	6hs
Bayou Goula	7hs 26m
Plaquemine	8hs 20m
Baton Rouge	10hs 22m
Bayou Sara	12hs 20m
Natchez	21hs 18m
General Taylor's plantation	24hs
Rodney	24hs 50m
Grand Gulf	26hs 14m
Vicksburg	30hs
Lake Providence	42hs
Napoleon	46hs
Montgomery Point	47hs 30m
Helena	2ds 8hs 30m
Memphis	2ds 15hs 30m
Randolph	2ds 18hs 50m
Cairo	3ds 11hs
Paducah	3ds 14hs 30m
Shawneetown	3ds 20hs 45m
Evansville	4ds 2hs
Louisville	4ds 18hs

Detained ten hours on the trip.
Running time four and one-half days.

3.—SPEED OF RACERS.

We give, from the "Spirit of the Times," the doings of another class of racers, and the fastest heats of four miles ever run in the United States. Assuredly as between steam-racing and horse-racing, one cannot choose long upon the score of morals and propriety.

Fashion—First heat in the match race won by her, beating Boston ..... 7·32
Free Trade—First heat in a race won by Tally-ho, Bostona second ..... 7·33
George Martin—First heat in a race won at New-Orleans ..... 7·34
Gray Medoc—First heat (dead heat with Altorf) in the race won by Gray Medoc ..... 7·35
Miss Foote—Second heat (after a slow one) at New-Orleans ..... 7·35
George Martin—First heat in a race won by Miss Foote ..... 7·36
Henry—First heat in the match race won by Eclipse ..... 7·37
Jim Bell—First heat in the race in which he beat Sarah Bladen ..... 7·37
Miss Foote—Second heat in the race in which she beat George Martin ..... 7·39
Louis d'Or—Second heat in the race won by Charmer ..... 7·39
Boston, Jim Bell, (a second heat at New-Orleans,) Sarah Bladen, (a second heat at New-Orleans,) Omega, Miss Foote, (a second heat at New-Orleans,) and, perhaps, some other. 7·40
Balie Payton—First heat in a race won by Duane 7.42
Monte—First heat in a race won by Jeff. Davis 7.42

Gray Medoc—Third heat, after a close second..... 7·42
Wagner—Second heat..... 7·43
Lady Clifden—Second heat..... 7·43
Tally-ho—Second heat, after closely contesting the first heat in 7·33..... 7·43
Eutaw—Second heat, beating Inspector's dam (Sarah Washington) and others ..... 7·43
Wagner—First heat..... 7·44
Clara Fisher—First heat (race won by Bonnets-o'-Blue)..... 7·45

4.—PROTECTION OF NEW-ORLEANS BY GOVERNMENT.

At a late large and enthusiastic meeting, held in New-Orleans, it was determined that a memorial be prepared, and a committee of gentlemen take charge of its presentation to Congress, urging upon that body the immediate establishment of a navy-yard at New-Orleans, a line of mail steamers to Vera Cruz, the opening of the passes at the mouth of the Mississippi, and the more regular transmission of the mails. We extract the leading resolutions, and shall from time to time refer to the subject in our pages, until justice be done to New-Orleans and the West in these particulars:

"*Resolved*—That the citizens of New-Orleans owe it to themselves and to the great commercial interests throughout the whole country connected with them, to claim from the Federal Government that protection which the importance of the commerce of the place deserves, and which should be in consonance with the strength and character of this country.

"*Resolved*—That New-Orleans being one of the principal cities of the Union, and the first and most prominent of the South, is considered by her citizens as entitled to a fair proportion of the public expenditure, as compared with any other city in the Union of the same relative importance; and having contributed largely to the general funds which have been expended in Northern cities to their great advantage and improvement, should now, in her turn, receive the consideration of government, in order to promote her advancement by a reasonable attention to all her wants.

"*Resolved*—That in view of the vast commercial importance of this city, receiving, as it does, the products of nearly one half of the states of the Union, and considering our close proximity to the various isthmus routes to the Pacific, over which, ere long, will pass a commerce of immense extent and value, it is incumbent upon us to urge upon the Federal Government the necessity of having a navy-yard established here of ample magnitude, so that our city and its commercial interests may receive such protection, in the event of war, as a well appointed navy-yard can afford.

"*Resolved*—That in order to conduce to the welfare of our city, and to induce success in developing its resources, it is incumbent upon us to promote and encourage among ourselves a spirit of devotion to objects of public good, and to exert our united and collective influence in representing, demanding and insisting upon our rights and claims on the General Government, not only so far as regards the immediate object of this meeting, but in reference to a regular transmission of the mails, the deepening of the water on the bars at the mouth of the Mississippi, and the establishment of a mail line of steamers to Vera Cruz, all of which are subjects of great interest to our city, and require the immediate and earnest attention of our senators and representatives in Congress.

5.—ROUTE OF TRADE UP STREAM.

If it could be necessary for us to add another to the significant facts that have already been furnished in our pages, showing the direction of trade away from the southwest, an extract from a late number of the Louisville Journal would be in point.

"Cotton and tobacco can now be forwarded from Louisville to New-York, by the lake route, at about 55c. p. cwt., while the rates of freight paid for tobacco and cotton to New-Orleans, from this and intermediate points, have ranged from $4 to $5 per hogshead on the former, and $1 30 per bale on the latter, which is nearly equal to the entire charge from here to New-York.

"Besides the increase in the rates of carriage, taking into consideration the greater length of time required for consignments to reach the Atlantic ports, via New-Orleans, than by the lake route, which in itself is a very important item, as regards the time in converting the products into cash, as well as having them in market in case a demand should spring up and a consequent realization of better prices, the lake route is by far more advantageous. But there are other reasons. The rates of insurance and commission, via New-Orleans, nearly double those by the northern route, to say nothing of the climate, which affects the quality and of course the price of articles. We might go on and enumerate various reasons, did we not deem that what has been set forth in the preceding is convincing as to the advantages of the northern over the southern route."

6.—HISTORY OF LAFITTE.

We cannot refrain from extracting from the Philadelphia Bulletin the following, which seems to shed further light upon the history of this remarkable personage. It will be perceived, that the writer expresses the belief that he could obtain other and the most satisfactory data from the family of Lafitte, now living in their native province. We trust that he will do so, and that eventually we shall be enabled to sift out the facts from the multitude of fictions which in regard to him have gained currency and credit. Though there was a good deal of romance mixed up in the sketch that we

published last October, which was from the pen of a gentleman now no more, several of the statements in it which were controverted are being corroborated from other sources.

HISTORY OF LAFITTE, THE PIRATE.

Circumstances made us acquainted at one period of our life with the real facts of Lafitte's history, verified in a manner that left no loop-hole for falsehood to creep in. Since then, we have read most of the novels that have been written respecting him, and greater libels were probably never penned, for they represent Lafitte either as a romantic hero, or as a human fiend, when, in fact, he was neither. On the contrary, he was a man who had been goaded by great wrongs to seek revenge, which he did in that wild Arab way which so often characterizes seamen, and which is nourished in the blood, partly by the loneliness of the sea, and partly by a life free from the conventionalities of civilization. For a true sailor has, as Herman Melville says, a spice of the wild morality of the desert, and is, at it were, the Bedouin of the great deep.

Jean Lafitte was born on the Garonne, and not at Marseilles, and was, from his very boyhood, accustomed to the ocean; for he belonged to a family which, for many generations, had furnished some of the most skilful seamen and daring privateersmen of Bayonne. In the great war of the French Revolution, when the commerce of his native province was almost destroyed, he embarked as lieutenant on board a private armed vessel, which, after running a brilliant career, was finally captured by a superior force and carried into an English port. Here Lafitte, with the other officers and the crew, was cast into prison. Time passed; his captain, his brother lieutenants, the common men even, obtained freedom—but Lafitte himself remained a prisoner. His friends, however, and relatives, were active to procure his discharge. Several times were prisoners of equal rank sent into the English ports, through the agency of his old captain, in order to be exchanged for him, but it was not until many long years had passed, that Lafitte found himself free. This long detention raised in him an almost savage thirst for vengeance against England; and, on his release, he returned immediately to privateering, principally for the harm he might thus do to English ships.

The pacification of Europe after the treaty of Fontainbleau deprived him of the means of legally carrying on his revenge. But long years of solitary brooding in prison, and night watches afterwards on the lonely sea, had destroyed, to a great extent, his reverence for human laws; he had, in a word, become an Arab at heart. He determined, accordingly, to continue his career. Yet he refrained from attacking any but English vessels, since it was only against England that he sought revenge. His relations in France heard of his course with inexorable pain, and remonstrated with him earnestly, especially one, who had been a sort of guardian in his youth, and who now expostulated with him almost with tears. But Lafitte was inexorable. At last his early friend called in the aid of religion, and reminded the erring man of the awful destiny he was preparing for himself in eternity. The reply was characteristic: "If I do go to ——," wrote Lafitte, savagely, "I will drag plenty of Englishmen with me." His relatives, aware how great had been the provocation, could say no more. But, from that hour, for many long years, the name of the wandering outlaw ceased to be spoken in the household of his fathers; and children, in whom ran blood kindred to his own, grew up to manhood, ignorant of his very existence.

The subsequent career of Lafitte is well known. Though he committed acts of piracy only on British vessels, he paid no regard to the revenue laws of any nation. For a long period he had under him quite a considerable force at the Island of Barataria. But his early education, which had been strict, asserted its power at last; old memories were re-awakened, and he sighed to return again to civilized life, to lay down the brand of the pirate, to pass his days in quiet. The volcano of passion or insanity, for it was as much the last as the first, had burned out in that fiery heart. He made his peace with the United States, as is popularly known, just before the battle of New-Orleans. Subsequently he returned to his native land, where he died not many years ago. His wife, whom he married in America, is still living, or was, at the time when we heard the narrative we have given.

We should have to violate the sanctities of private life, if our authority was to be given. At the time we heard of the history of Lafitte, we were told the name of his old captain, of the privateer in which he was captured, and many other facts which we have since forgotten. We regret that we did not take down in writing these details. We could possess ourselves of them, indeed, in a month or two, for his relatives still live in their native province; and, perhaps, we may do this yet.

7.—ERRATA.

In our sketch of the life of Edward Bates, of Missouri, published some months ago, some typographical errors, etc., appear. Mr. Bates is stated to have been attorney-general under the United States, instead of under the State of Missouri, and to have been married in 1829 instead of 1823. For "attorney-general of the United States," we intended to say that he was appointed Secretary of War. Near the end of the notes the word "none," in place of "some," conveys the very opposite of the meaning we desired in regard to his very able essays upon the Mexican war, etc. In the sketch of Col. Allston, in May number, Col. Kearney is made Col. Carey, and Pierre Gibert transformed into Pierre Gilbert.

8.—CENTRAL AGRICULTURAL SOCIETY OF GEORGIA.

The seventh annual fair is to be held at Macon, on the 19th, 20th, 21st, 22d, 23rd October; and it will be on a most brilliant scale, worthy altogether of the great industrial reputation of Georgia. Among the premiums we find a new feature, viz.: for essays upon agricultural and other cognate subjects—agricultural education, elements of agriculture, horticulture, manures, fencing, ditching and draining, stock raising, &c.; also for papers upon cotton, corn, rice, sugar, wheat, oats, rye, peas, potatoes, turnips, clover, hay, &c. A premium of $100 is offered for the best essay on the treatment and management of slaves, which we hope the Society will send for publication in our Review, where it will reach the whole planting interest of the South. Indeed, we shall be glad to publish any of the papers they may think fit to furnish us. Among the premiums to be awarded for the products of the field, &c., we notice the grand divisions of field crops, cotton bales, cattle, horses, jacks and janettes, mules, sheep, shepherds' dogs, swine, poultry, pork, bacon and beef, dairy, honey, household department, domestic manufactures, silk, needle and shell-work, manufactures other than domestic, fruits, floriculture, horticulture, fine arts. There will be a grand plowing match during the fair. The local or district society, which shall send the largest delegation to the fair, will receive a premium. We hope that all of Georgia, and a large part of the South generally, will make it a point to be present. A full list of the premiums may be found in that excellent journal, "The Soil of the South," published in Macon.

9.—CUBA.

Mr. Ashbel Smith has published in one of the Texas papers some memoranda to the effect that the subject of the sale of Cuba to the United States was broached, through an unofficial channel, on behalf of Spain, last summer, a short time previous to the Cuba expedition, and that the negotiation was broken off by the news of that expedition. It seems that Mr. Smith was consulted by a Spanish gentleman of high standing, who represented that he spoke with the knowledge of the Spanish government, and that the purpose was *unofficially* to sound the representative of the American government, Mr. Lawrence. Should it be deemed advisable, the matter would assume an *official* form. Mr. Smith addressed a note to Mr. Lawrence, and received one in reply.

"It was afterwards agreed on the suggestion of the Spanish parties that they should draw up a memorandum without signature, which should form the basis of the interview, etc., with Mr. Lawrence. The delay incident to the preparing of the memorandum, and the absence of one of the parties for a fortnight on the continent, prevented its delivery until the arrival of the Cuban news, which caused the utter abandonment of the business. The memorandum was destroyed, and the parties informed me they dare not be seen visiting the American Legation under present circumstances."

[The reader will here call to memory the X. Y. Z. chapter in our diplomatic history.]

10.—AGRICULTURAL AND MANUFACTURING FAIR IN TEXAS.

Several thousand persons are said to have congregated lately at Corpus Christi, Texas, for the purpose of attending a great fair which was announced to come off. An address was delivered by Ashbel Smith. A large number of premiums was awarded. A series of resolutions was passed, which are, in our opinion, so well conceived, and so well calculated, if carried out, to promote the advancement of the state, that we cannot forbear their insertion.

"Whereas, the state of Texas is settling with unexampled rapidity by emigrants in large bodies from Europe, as well as our sister states, and furnishes in her climate unparalleled agricultural and pastoral resources, as well as the singular advantages of her position on the Mexican Gulf, her contiguity to another nation of vast mineral wealth, and inclosing within her territory one-half the route from the Atlantic to the Pacific shores of the United States.

"And whereas, by the late settlement of the territorial question with the general government, Texas is now in possession of ample means for the development of her great natural sources of wealth, which will add to the welfare and happiness of the whole Union. Therefore, as a proper occasion on the part of the citizens of Texas, now here assembled, for the expression of their opinions, and with the hope of arousing attention among the people at large—

"*Resolved*, That we earnestly invoke the discussion of the question, among the people of the several counties of this state, of the development of our means of intercommunication, inland and seaboard, with a view to a united and well digested plan of internal improvements for the state.

"*Resolved*, That recognizing no sectional distinctions, preferences or prejudices, but looking to the interest of the whole state, we offer, as our opinion, that a sufficient sum should be appropriated, at the next meeting of the Legislature, to clear out the rivers of the state, and place her bays in easy communication with one another; thus bringing together agriculture and commerce, and leaving the natural advantages of each individual port to develop itself as its capital, position, &c., may decide.

"*Resolved*, That the people throughout the state are asking for these improvements, especially as regards the navigation to the entrance of our seaport towns and our bays inland, as preliminary to other and more permanent ones, and that the adoption of these will lead to their extension by rail-roads, by developing in advance the resources necessary for their support."

11.—INSURANCE RATES ON WESTERN RIVERS.

The people of Harrison, Cass, and the adjoining counties of Texas, have lately signed an indignant protest against the course of

the insurance companies in New-Orleans, in raising their premiums from 1¼ to 2 per cent. on risks to the upper waters of Red River and the lakes. They believe it to be a scheme "invented at Shreveport for their injury," and they pledge themselves not to trade with any of the parties involved in the affair, and to remain their own underwriters rather than submit, as they term it, to the "black mail," which is sought to be imposed. They have sent us a copy of the protest.

12.—THE MOUTH OF THE MISSISSIPPI.

The memorial of the Chamber of Commerce of New-Orleans to the Congress of the United States has at last appeared, in which it is prayed that $100 to $150,000 be appropriated annually to steamboat companies, who, for this consideration, will agree to keep open the passes of the river. The memorial gives a gloomy picture of the present state of things in that quarter:

"Within the last few weeks, nearly forty ships have been aground on the bar, for various periods, from two days to eight weeks; some of which are compelled to throw portions of their cargo overboard, and others to discharge cargo into lighters, before they could be got through the channel, occasioning heavy expense to the goods, and great straining, injury, and loss of rigging, anchors and cables to the vessels.

"The fixed and certain loss from these detentions cannot be estimated at less than $500,000, independent of the contingent loss arising from fluctuations and loss of markets, consequent upon the delay of merchandise shipped to meet a certain condition of things abroad, which may be entirely changed by the undue detention of the property in this port.

"The duties of importations on foreign productions brought into the country through this channel within the last year, and collected in the city of New-Orleans, was $2,260,790; which added to $700,000 calculated here, but collected in the ports of Cincinnati, Louisville and St. Louis, makes a total of near three millions of dollars of revenue which goes into the coffers of the government."

13.—LATE PUBLICATIONS.

1.—*The Works of Alexander Hamilton*, comprising his Correspondence and his Political and Official Writings—exclusive of the Federalist—civil and military. Published from the original manuscripts deposited in the Department of State, by order of the Joint Library of Congress. Edited by John C. Hamilton, author of the Life of Hamilton. New-York: C. S. Francis & Co.

We have, to our great satisfaction and delight, procured a copy of this admirable work, which is published in seven large and handsome volumes, and contains all of the manuscripts purchased by Congress from the heirs of the distinguished Hamilton.

Though of a different political school, and regarding many of his doctrines as heretical, we cannot but unite with all of our countrymen in a high appreciation of the integrity, ability and public services of this statesman, who stood high enough in the graces of Washington to be at the head of both his civil and his military family;—we say civil and military, for no one can question his ruling influence in the cabinet, nor forget that the retired president made it a condition on again accepting the command of the army, that Hamilton should be his second.

The *first* volume contains the correspondence of Hamilton between the ages of twelve and twenty-two.

The *second* volume contains his Vindication of Congress, 1774; The Farmer Refuted; the papers of Phocion, Cincinnatus, etc.; Resolutions in Congress; Federal Convention and Propositions for a Constitution of Government; the New-York Convention, etc. This volume covers the period of the corespondence in vol. i.

The *third* volume contains his celebrated Reports, as Secretary of the Treasury, on Finance, State Debts, Public Lands, Public Credit, National Bank, the Mint, Manufactures, etc., etc.

The *fourth* volume contains Cabinet Papers, opinions, estimates, and the correspondence between Hamilton and Washington, Jefferson, Randolph, Short, etc., etc.

The *fifth* volume continues the Cabinet Papers, with all those of a military character, and brings down the correspondence to his 36th year.

The *sixth* volume continues the correspondence to his 46th year, and adds many other letters supplied by Bishop Potter. There are also several papers included on the Funding System, etc.

The *seventh* volume contains the political essays signed An American, Amicus, Catullus, Pacificus, Americanus, Camillus, with a great many others less celebrated; also the original copy of Washington's Farewell Address, with emendations, etc. The whole concludes with very minute indexes, etc.

We regret that a Life of Hamilton was not appended to the volumes, and that the "Federalist" papers are left out. The work can be had from the publishers.

2.—*History of Modern Philosophy*. By M. Victor Cousin. In 2 vols. D. Appleton & Co., New-York; J. B. Steel, New-Orleans.

The name of Victor Cousin is certainly first among the metaphysical writers of the age; but he has the art of throwing all the graces and fire of diction around the most abstruse material. We recollect with delight his admirable work upon Psychology, which formed a part of our college course, and constituted one of our most pleasant studies. The present work includes the first, and consists of lectures delivered in Paris in 1828–9, which created an extraordinary sensation, and are now for the first time given to the English public. Two thousand auditors listened in admiration to the eloquent expo-

sition of doctrines unintelligible to the many, and the oral discussion of philosophy awakened in Paris and in France an interest unexampled since the days of Abelard. The chapters embrace Idea of Philosophy, History of Philosophy, Psychological and Fundamental Epochs in History, Great Epochs, Plan of History, Geography in History, Nations, Great Men, Historians of Humanity, Historians of Philosophy, Philosophy in the Nineteenth Century, Picture of Eighteenth Century, Classification of Philosophical Systems, Mysticism, Greek Philosophy, Examination of Locke and the other Masters, etc., etc.

3.—*Romance of Natural History;* or Wild Scenes and Wild Hunters. By. C. W. Webber, author of "Shot in the Eye," "Old Hicks the Guide," &c. Philadelphia: Lippencott, Gambo & Co. 1852. New-Orleans: T. L. White.

Mr. Webber is a young Kentuckian, who has won high reputation in works of this character, and we trust is winning something equally substantial in "material aid." He tells us here that the object has been to trace the passions of the hunter-naturalist, from their infant dawnings through their gradual developments, up to the stern and strong individualities of such men as Audubon, Boone, Wilson, &c. The wood-cuts are fine, and the stories well told, and often of deep and harrowing interest. The style of typographical execution and binding is also superior.

4.—*Appleton's Popular Library.* The Paris Sketch Book. By W. M. Thackeray. 2 vols.

This belongs to a series of which the Messrs. Appleton are the publishers. The works will be issued semi-monthly, handsomely printed and bound, and contain from 2 to 300 pages each, the object being, to supply for the delight of all, the most agreeable and suggestive authors in narrative, adventure, invention, poetry, sentiment, wit and humor. They may be had from J. B. Steel, and J. C. Morgan, New-Orleans. Price 25 to 50 cents each.

5.—*Guide to Scientific Knowledge.*

A good book, published by C. S. Francis & Co., of New-York, and intended for the use of schools. The author is Dr. Brewer, of London. He has succeeded in popularizing an immense amount of practical knowledge in the natural sciences.

6.—*Romanism at Home,* embracing a series of letters to the Chief Justice of the United States upon the abuses of the Romish Church. In his reply to them, Bishop Hughes speaks of their language as not unworthy of the country which produced Dean Swift and Goldsmith. Harper and Brothers, New-York; J. C. Morgan, New-Orleans.

7.—*Barnes' Notes on the Book of Revelation.* Harper & Brothers; Morgan, New-Orleans. We shall allow a Churchman, Noel, to speak of Mr. Barnes' claims as a commentator: "He has more learning than Scott; more critical decision than Henry; more spiritual discernment than Whitby; more copiousness than Benson; and more judgment than Gill. He affords precisely the aid which an English reader requires when seeking to ascertain the exact sense of obscure passages; and these "Notes" will, in my opinion, render essential aid to the cause of religion."

8.—*Roman Nights; or the Tomb of the Scipios.* Translated from the Italian, by Henry W. Hilliard. In the work, Marius and Sylla review their career, and we listen to debates between Pompey and Cæsar, which bring to light the policy of each—rivals on earth, and still dividing the assembled multitude of the departed into rival factions. John Ball: Philadelphia and New-Orleans.

9.—*Year Book of Facts*—1852. By Timbs. Hart, publisher. We are indebted to J. C. Morgan, New-Orleans, for a copy. It embraces a brief sketch of all the discoveries and improvements of the past year in mechanics, arts, philosophy, chemistry, geology, geography, meteorology, astronomy, etc., and is, of course, a valuable work for students, etc.

10.—*Bleak House*—No. 2. The Harpers are now publishing, in a neat series, this latest of the productions of Charles Dickens. Price, 12½ cents each.

11.—*Harper's Monthly Magazine*—June. This work is now said to have a circulation of 100,000 copies. It is almost incredible, but no doubt true. This must speak for its merits.

12.—*Spangles and Tingles;* or Rival Belles. A Tale. By J. B. Jones, author of Wild Western Scenes. Published by A. Hart, of Philadelphia; Morgan, New-Orleans. This is another of the series of humorous American works illustrated by Darley.

13.—*Consulate and Empire of Napoleon.* A. Hart, of Philadelphia, having published the first ten parts of M. Thiers' *Consulate,* has now issued the eleventh, and the whole, it is said, will be completed by the author in fifteen parts. Price, 12½ cents each.

14.—*Journey to Iceland and through Sweden, Norway, etc.* Another of Putnam's new series, sent us by Morgan, and from the pen of that indomitable woman-traveler, Madame Pfeiffer, who has a passion to travel the world all over, and is doing it. We shall hereafter look more largely into the volume for our readers.

15.—*Fletcher's Notes on Slavery.* A very large, learned, and elaborate volume, which a friend has been kind enough to take from our desk, promising to give it such a review as its merits shall deserve. We hope it will be ready for our next.

16.—*Pictorial Field Book of the Revolution. No.* 21. By B. J. Lossing. Harper & Brothers. Morgan, New-Orleans.

In three or four numbers more this valuable and interesting work will be completed. The illustrations are beautiful as well as the letter-press. The author announces a new serial work of a similar character which will bring the subject of American history down to the close of the war of 1815, and another work on the French Dominion in North America.

17.—*The Way to Do Good*—Being the third and concluding vol. of Jacob Abbott's "Young Christian Series." 1. The Young Christian. 2. The Corner Stone. 3. The Way to do Good; very greatly improved and enlarged. Beautifully illustrated, 12mo., muslin; $1 per vol. This series has been reprinted or translated in England, Scotland, Ireland, France, Germany, Holland, India, etc., and in the various foreign missionary stations. J. C. Morgan, New-Orleans.

18.—*Falkenburg:* A Tale of the Rhine. By the author of "Mildred Vernon," "Germania," &c. New-York: Harper & Bros.

It captivates the attention of the reader with the uncommon spirit and gayety of its dialogue, and its great descriptive power. There is a charm in its delineations of character, which are executed with great skill, and show a true knowledge of the human heart. The scene is laid on the Rhine, but the principal characters are English, most of them, it is stated, being taken from real life. The moral is excellent; the love passages, which are numerous, are pure and refined; the conversations are carried on with great vivacity. No one could take up the book without completing its perusal.

19.—*Bleak House.* By Charles Dickens; with Illustrations. Part 1. We adopt the expressions of a northern critic.

"If the quality of this new work by Dickens be sustained throughout, we do not hesitate to say that it will be the best he has written. As a cotemporary has said, 'It has the ring of the genuine metal.' That tomb of so many hopes and fortunes, the Court of Chancery, supplies him with materials; and so far as the plan of the work is developed in this the first number, both plot and characters will be laden with interest. The superabundance of minute touches, which is, perhaps, Mr. Dickens's main defect, is dispensed with, and nothing lingers or loiters in the story. It cannot fail to find tens of thousands of readers."

20.—PERIODICALS.

Whig Review.
Democratic Review.
Western Journal and Civilian—St. Louis
Knickerbocker.
Plow, Loom and Anvil.
Bankers' Magazine—Boston.
American Journal of Science and Art.
Southern Quarterly Review.
Literary Messenger—Richmond, Va.
New-Orleans Medical Journal.
Charleston Medical Journal.
Southern Magazine—Mobile, monthly.
United States Economist.
New-Orleans Medical Register.

Most of these are standard American periodicals, of which nothing need be said in praise, with which we gladly exchange and gladly reciprocate acknowledgments.

In the last *Whig Review* there is a fine portrait of Judge Sharkey, with a biographical sketch, admirably prepared by his friend and admirer, (we think,) J. M. Chilton, Esq. One of the editors of the *Western Journal* was lately in New-Orleans, and we trust succeeded in making such arrangements as will eventually bring his valuable work into a respectable circulation throughout the southwest. It is published monthly, at $3 per annum. The *Bankers' Magazine*, for May, contains—

1. Prize Essays.
2. Lawson's History of Banking.
3. Savings Banks.
4. Bank Decisions in the States.
5. Bank Statistics.
6. Miscellaneous.

The *Southern Quarterly* opens with a paper by Brantz Mayer, upon Southern Agriculture, with numerous dissenting notes, by Mr. Simms. There are other able papers on the Battle-fields of Mexico, California Gold, etc., Domestic Histories of the South, etc. The *American Journal*, edited by Silliman & Dana, contains its usual *quantum* of scientific matter. This is really one of the first scientific periodicals in the world, and should be in the hands or library of every one professing the least regard for books or claims to learning. The *Southern Magazine*, edited by G. C. Clark, and published at the low rate of $1 per annum, is a fine literary periodical—certainly much better than the most of those that are ever flooding the South, of northern manufacture. Yet we *will* continue to love the Yankees and their literature, though we may abuse them for our pastime. We wish success to our neighbor. The *United States Economist* is a new journal, started in New-York, by T. P. Kettell, the McCulloch of America, published weekly, at $3 per annum. We hazard nothing in saying, that this is the ablest statistical journal in America, and that if Mr. Kettell will adhere to it, it will have a reputation equal to that of its English namesake. We have no language to express our admiration of its plan and its execution. The *New-Orleans Medical Register* has reached eight monthly numbers. It is edited by Dr. Axson, who is one of the most scientific, meritorious, and rising practitioners of the "healing art" in New-Orleans.

PAMPHLETS, ADDRESSES, REPORTS, &c.

21.—*Address before the Alumni of the College of Charleston.* By William P. Miles, Anniversary Orator, 1852.

Professor Miles has many sound views of liberty and government; recognising in the one something distinct from mere "license," and in the other not necessarily "republican forms." Sound and good government may exist without these. Indeed they are not everywhere and at all times the best. He developes the idea of Mr. Calhoun, who said that men were not "*born*" but *educated* to freedom. The address is particularly severe upon Mr. Kossuth and his adherents, but we cannot go quite so far as to adopt the stern and selfish rule that it inculcates. Though a case may not be presented *now* sufficient to justify the intervention of our government, it is safer to lay down no general rules, but to let each case as it comes up be decided upon its own merits. We could easily frame a contingency in European politics when, even upon the "selfish" policy, intervention might be *prudence*, and we are far from falling into that illiberal and unstatesmanlike dogma, that in the affairs of the great family of nations, the one which is growing to be the most potential of them all, shall forever remain shut in by Chinese walls. We doubt if this was the doctrine of Washington and his Cabinet, or of the "early Presidents." We are sure that the speech of Mr. Soule, in the Senate, (though we do not subscribe to all of it,) must shake such an opinion.

22.—*Discourse to the Graduating Class of the College of Charleston:* By Prof. J. W. Miles, 1852.

A very philosophical essay upon the grounds of morals, and a very practical application of the rules of ethical science. Mr. Miles is a theologian, imbued with much of the German spirit and lore, and has already, though a young man, attained to an envinble rank in scholarship.

23.—*Address before the Medical State Society of Louisiana:* By E. H. Barton, M. D.

There are many curious and interesting things in this address, and we ought to review it elaborately. It opens with the recommendation of a registry system for the state, and argues the matter ably. The early medical history of Louisiana—origin of the medical college—changes of the diseases in the state follow. We have speculations upon the health of New-Orleans, and what would have been the result had the advice given by medical men 30 years ago been followed, &c., &c.

24.—*Catalogue of the Memphis Medical School.*

There were 52 matriculants and 16 graduates last year Attached to the catalogue is an interesting address, by Prof. Quintard, upon the *True Physician.*

25.—*Report—Macon and Savannah Rail-road.*

26.—*Report—East Tennessee and Virginia Rail-road.*

27.—*Alabama and Mississippi Rail-road.*

28.—*Mr. Cabell on Virginia Improvements.*

29.—*Rep. Alabama and Tennessee R.R.*

30.—*Rep. James River and Kanawha R.R.*

These are all valuable documents, which will be consulted and quoted from by us from time to time in the progress of our rail-road researches; but as our readers are complaining, important as the subject is, that we are cramming them too much, we must necessarily dismount from our hobby occasionally.

31.—*Hungary in* 1851; with an experience of the Austrian Police. By Charles Loring Brace. Charles Scribner, New-York. T. L. White, New-Orleans.

The author was immured in an Austrian dungeon, and therefore speaks of "experiences." He has illustrated his work with a map and many fine lithographs, and gives a very full history of the government, laws, &c., of Hungary, together with the state of manners, morals, society, &c., now existing. There are many interesting statistics, which we shall hereafter draw upon much more at length.

32.—*Historical Account of St. Thomas,* West Indies; with incidental notices of St. Croix and St. Johns.

This work is from the pen of John P. Knox; is published by Scribner, and for sale by White, New-Orleans. It treats of the rise and progress of the island in commerce; its missions and churches; its climate and adaptation to invalids; geological structure, natural history and botany. It also treats at length of emancipation and the present condition of the negroes in the islands. The author concludes—"Vagrancy is the curse of nearly all the English West India islands." * * * * * *

"These live principally by their vices, and are thus plunging themselves into greater degradation, poverty and suffering." P. 124.

33.—*The Works of Stephen Olin, D. D., LL.D.,* late President of the Wesleyan University.

We have received two volumes from Mr. Scribner, through T. L. White, of New-Orleans. Dr. Olin had the reputation of being one of the most eloquent and gifted men in America, though he had published little except a very interesting book of travels in Europe. The *first* volume contains sermons selected from his manuscripts—the *second,* lectures written a few months before his death. The lectures are mainly upon the subject of Christian education. Four of them are to the graduating classes of the University. There are also many missionary addresses, &c., breathing the intense zeal of the author for the spiritual welfare of his fellow-man.

34.—*Ivar, or the Skjuts Boy*; a Romance, by Miss Carlen, from the Swedish.

In the literary circles of her own country, Miss Carlen is considered superior to Fredrika Bremer, and her works are sought for with great avidity.

35.—*The Household of Sir Thomas More.*

A quaint but beautiful production, written in fine old English, with all the simplicity and softness imaginable, and purporting to be by the daughter of the great Sir Thomas. Of course, it is all imaginary; but he who could put down the book without admiring the author, must have little of romance or nature in him. (From White, New-Orleans.)

36.—*Anthon's Grecian Antiquities*; with illustrations.

Such a work was needed for schools and colleges, as those in use were very meagre, and reflected none of the light which the later explorations have developed. It is a companion for the Roman Antiquities, by the same author. New-York: Harper & Brothers. J. C. Morgan, New-Orleans.

37.—NOTES.

We thank Lieut. M. F. Maury for a memorial, prepared by him, to the Congress of the United States, and shall refer to it again hereafter, asking that Norfolk, or Charleston, or some other Southern Atlantic port, may be made the terminus of a line of United States mail steam-ships to Para, touching at Porto Rico, and such other West India Islands as may be agreed upon.

A SOUTHERN RIVAL FOR NEW-YORK.

Baltimore is seeking this position. We are glad of it; and copy from the *Sun* a notice of a meeting proposed to be held by her merchants and leading citizens. (*Aside*—We have long been aiming for such results, but no citizen of Baltimore ever sustained us or the Review.)

"Our city being in the direct line of communication with the Southern states generally, and nearer to them than any other of the same peculiar commercial character and extent, is naturally looked to by the citizens of those states as a point with which it might be desirable to establish more extended relations of trade."

LATEST PUBLICATIONS

Received at J. C. MORGAN'S New-Orleans Literary Depot, Exchange Place, adjoining the Post-Office.

The Isthmus of Tehuantepec. Illustrated with numerous maps and engravings. Arranged by J. J. Williams, Assistant-Engineer. 1 vol., 8vo.

The History of Modern Philosophy. By M. Victor Cousin. 2 vols., 8vo.

Men and Women of the Eighteenth Century. By Arsene Houssayer. 2 vols., 12mo.

A Buckeye Abroad; or Wanderings in Europe and in the Orient. By Samuel S. Cox. 1 vol., 12mo.

Essays on Life, Sleep, and Pain. By Samuel Henry Dickinson, M.D. 1 vol., 12mo.

The World Here and There. From Dickens' Household Words. 1 vol., 12mo.

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The Book of Ballads. Edited by Bon Gaultier. 1 vol., 12mo.

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Tales and Traditions of Hungary. By Theresa Pulszky. 1 vol., 12mo.

Recollections of a Literary Life. By Miss Mitford. 1 vol., 12mo.

The Maiden and Married Life of Mary Powell, afterwards Mistress Milton.

The Yellow-Plush Papers. By Thackeray.

The Approaching Crisis; being a review of Dr. Bushnell's Lecture on Supernaturalism. By Andrew Jackson Davis.

The American Bird Fancier; considered with reference to the Breeding, Rearing, Feeding, Management, and Peculiarities of Cage Birds. By D. J. Brown.

Bancroft's History of the United States. Vol. 4.

Nicaragua; its People, Scenery, Monuments, and the Proposed Interoceanic Canal. With numerous original maps and illustrations. By E. G. Squier. 2 vols., 8vo.

The History of Alabama, and Incidentally of Georgia and Mississippi, from the Earliest Period. By Albert James Pickett.

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Essays from the London Times; a Collection of Personal and Historical Sketches. 1 vol., 12mo.

NOVELS.

School for Husbands. By Lady Bulwer.

Head of the Family. By the Author of Olive, &c.

Count of Monte Leone; or the Spy in Society.

Ravenscliffe. By Mrs. Marsh.

Marcus Warland. By Caroline Lee Hentz.

The Use of Sunshine. By the Author of the Maiden Aunt.

Margaret Cecil; or I can because I ought.

As Good as a Comedy; or the Tennesseean's Story.

Darien; or the Merchant Prince. By Eliot Warburton.

A Story without a Name. By G. P. R James.

Self-Deception; or a History of the Human Heart. By Mrs. Ellis.

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Rosalie Dupont. By Emerson Bennett.

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Malice; a Tale of Real Life. By J. B. Alexander.

Falkenburg; a Tale of the Rhine.

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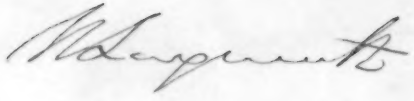
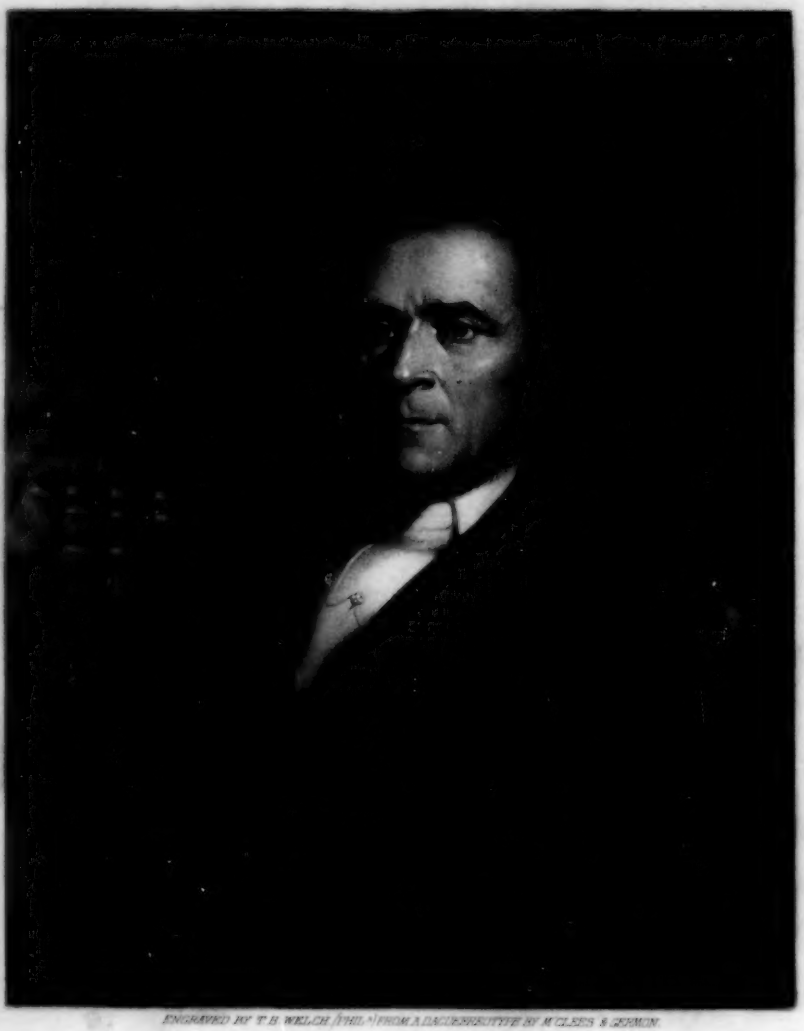


OF CINCINNATI, OHIO

Engd by F Gutsch, expressly for De Bow's Review New Orleans.

No 19.

Gallery of Industry & Enterprise



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JOHN CRIGG.

John Grigg